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# COMMERCIAL FISHERIES REVIEW



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# COMMERCIAL FISHERIES REVIEW



## A REVIEW OF DEVELOPMENTS AND NEWS OF THE FISHERY INDUSTRIES PREPARED IN THE BRANCH OF COMMERCIAL FISHERIES

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## THE NORTHERN SHRIMP FISHERY OF MAINE

By Leslie W. Scattergood\*

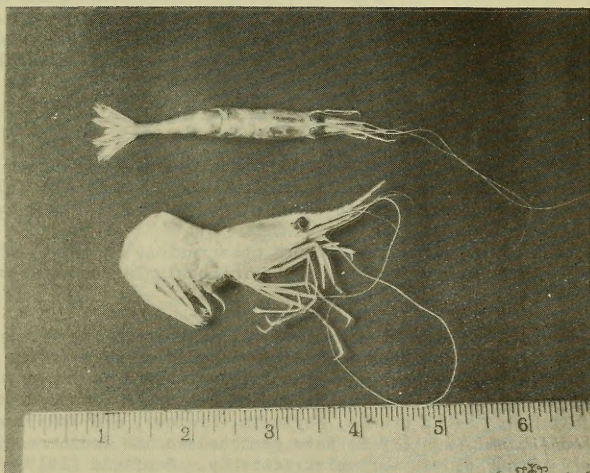
### ABSTRACT

OBSERVATIONS ON THE RISE AND FALL OF THE NORTHERN SHRIMP (PANDALUS BOREALIS) FISHERY OF MAINE ARE PRESENTED. IN ADDITION TO GIVING PRODUCTION STATISTICS FOR 1929-50, VARIOUS PHASES OF THE NORTHERN SHRIMP FISHERY ARE DISCUSSED. AMONG THE SUBJECTS COVERED ARE BACKGROUND, EXPLORATIONS, DEVELOPMENT, AND FISHING GEAR AND METHODS USED IN THE FISHERY. ANALYSES OF THE FISH AND SHELLFISH CAUGHT IN SHRIMP HAULS AND THE COMPOSITION OF THE SHRIMP CATCH ARE INCLUDED. THE ARTICLE CONCLUDES WITH A DISCUSSION OF THE PROBABLE REASONS FOR THE DECLINE OF THE NORTHERN SHRIMP FISHERY OFF THE NEW ENGLAND COAST.

### INTRODUCTION

Among the commercially valuable crustaceans in the United States, the shrimps are now the most important. In both poundage and value, they exceed the lobster, spiny lobster or sea crawfish, and various edible crabs. During the past decade, the shrimp fisheries have gained increasing importance in the United States. In the South Atlantic and Gulf States the production of the Southern shrimps (predominantly Penaeus setiferus, Penaeus aztecus, and Penaeus duorarum) climbed from 118 million pounds in 1936 to 189 million pounds in 1945. The 1950 catch was estimated at 182 million pounds. At the present time, Southern penaeid shrimps probably represent 98 percent of the total catch of shrimps in this country and Alaska.

Not all the other species of shrimps have shown the same steady upward trend in production as have the Southern shrimps recently. This is particularly true of the Pacific Coast. The catches of the California shrimps, primarily



TWO SPECIMENS OF ATLANTIC COAST NORTHERN SHRIMP (PANDALUS BOREALIS). CHARACTERISTICS OF THIS SPECIES ARE: (1) A TUBERCLE OR SMALL SPINE ON THE DORSAL SURFACE OF THE REAR HALF OF THE THIRD ABDOMINAL SEGMENT; (2) A BIFID ROSTRUM, WITH THE LOWER TIP PROJECTING BEYOND THE UPPER TIP. NOTE THE EGGS ON THE LARGER SPECIMEN--OVIGEROUS FEMALES MAKE UP THE BULK OF THE COMMERCIAL CATCH. (LARGE SPECIMEN DOES NOT HAVE LEGS IN NORMAL POSITION.)

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Crago franciscorum and C. nigricauda, have declined from slightly over 2,240,000 pounds in 1936 to about 437,000 pounds in 1946. However, the California catches climbed to 843,000 pounds in 1947, and still higher to 931,000 pounds in 1948, but dropped to 804,000 pounds in 1949.

The fishery for the Northern shrimps (species of Pandalus and Pandalopsis) along the Pacific Coast declined from 2,817,000 pounds in 1936 to 1,322,000 pounds in 1945 (table 1 and figure 1). These declines during the period were caused largely by various World War II restrictions on fishing and by disruptions in the economic pattern of the fisheries along the Pacific Coast. An upward spurt in production took place in 1948 due mainly to a slight increase in interest in the Alaska shrimp fishery. In 1949, however, the catch almost dropped back to the 1944 and 1945 level.

There are no recent statistics on the minor catches of the fresh-water shrimp, Macrobrachium ohionis, in the Mississippi River drainage.

The fishery along the New England coast for the Northern shrimp, Pandalus borealis, had a remarkable development in Maine from 1933 to 1945 (table 2 and figure 2), but after that year the fishery steadily declined. No catch of shrimp

Year	Alaska	British Columbia	Washington	Total
	lbs.	lbs.	lbs.	lbs.
1936	2,645,423	69,600	101,600	2,816,623
1937	2,575,795	121,200	46,900	2,743,895
1938	2,428,609	150,400	25,100	2,604,109
1939	2,441,329	83,100	60,700	2,585,129
1940	2,824,103	114,500	55,300	2,993,903
1941	2,473,491	61,000	27,100	2,561,591
1942	1,692,810	39,200	12,300	1,744,310
1943	636,790	52,100	54,300	743,190
1944	784,660	38,800	24,800	848,260
1945	1,198,617	79,900	43,800	1,322,317
1946	346,811	118,500	130,400	595,711
1947	350,375	106,800	44,200	501,375
1948	2,834,803	353,900	42,200	3,230,903
1949	521,703	-	67,100	-

- NOT AVAILABLE.

1/ALASKA FISHERY AND FUR SEAL INDUSTRIES REPORTS, 1936-45.

2/ANNUAL FISHERIES STATISTICS OF CANADA REPORTS, 1936-45.

3/FISHERIES INDUSTRIES OF THE UNITED STATES OR FISHERY STATISTICS OF THE UNITED STATES REPORTS, 1936-49.

is recorded for Massachusetts in 1928, although we know from Birdseye's account that there were some landed during January of that year. It is possible that the statistics may also err in some of the subsequent years. After 1938, such errors would be of smaller magnitude, particularly in Maine where State and Federal Government fisheries agencies initiated a system in which statistical agents collected monthly figures on the catch of fish and shellfish. After the fishery assumed larger proportions in 1938 and the following years, the statistics improved in accuracy.

It is my purpose to record observations on this fishery, for one is seldom given the opportunity to witness the beginning and the practical end of a local fishery.

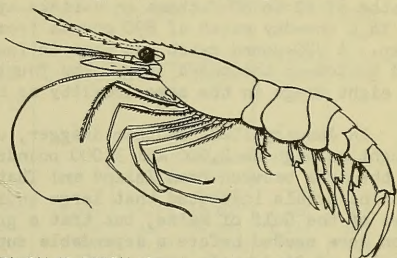
There is less information available about the New England Northern shrimp than for most other commercially-valuable species in the United States, British Columbia, and Alaska. As most edible shrimps have been utilized in North America for many years, some biological and historical notes on these fisheries have been published. Among others, Weymouth, Lindner, and Anderson (1933) and Anderson, Lindner, and King (1949) have reported on the Southern shrimp fishery, which is perhaps our oldest shrimping activity. Scofield (1919) and Bonnot (1932) have provided information on the California shrimps, which have been caught in San Francisco Bay since about 1869. Hynes (1930) has described the Alaska shrimp fishery, which began in 1915, and Smith (1937) has made observations on the Puget Sound shrimps, fished since 1888. Berkeley (1929 and 1930) made important biological findings in her studies on the Pandalidae of British Columbia. Various shrimp reports have also been made by others. Although there is no information about the



New England Northern shrimp fishery comparable to that given in the above reports, some observations are available.

#### BACKGROUND OF ATLANTIC COAST NORTHERN SHRIMP FISHERY

While the present Pandalus borealis fishery in New England is of recent origin, the potential commercial possibilities of harvesting Northern shrimp have been known for many years. In discussing the possible future importance of New England Pandalidae, Rathbun (1883) stated: "When their haunts, great abundance, and fine flavor, as well as the proper methods of capturing them, become known to the fishermen, it is fair to suppose that they will give rise to an important industry. Such a fishery must necessarily be more difficult than the shrimp and prawn fisheries of the Southern States, and would require more capital, in the start, for the purchase of larger boats and more extensive nets; but there is every reason to believe that it would repay the outlay to, at least, a limited number of fishermen, for many important markets are close to hand." Rathbun (1883, 1884) also mentioned that the distribution of shrimp along the New England coast had been traced by the United States Fish Commission which had constantly come upon immense schools of them.



PANDALUS BOREALIS

LENGTH 70 TO 135 MM. (ABOUT 2.76-5.31 INCHES).

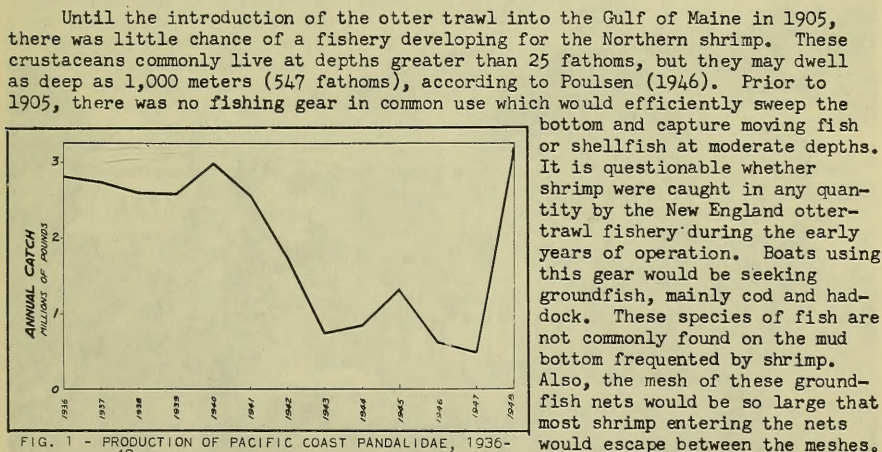


FIG. 1 - PRODUCTION OF PACIFIC COAST PANDALIDAE, 1936-48.

Birdseye (1928) mentioned that Gloucester draggers had brought in small quantities of these New England pink shrimp for several years prior to 1927. Many of them were eaten by fishermen, but some were sold on the Boston market. Officials of the General Seafoods Corporation became interested in the commercial possibilities of the shrimp and conducted experiments to determine the proper methods of cooking, freezing, and storing. They then decided to ascertain whether these crustaceans could be obtained in quantity at a reasonable cost. Thus began the first organized attempt to establish a shrimp fishery in New England--44 years after Rathbun's note of its potentialities.



## NORTHERN SHRIMP EXPLORATIONS BY COMMERCIAL FIRM

During June and July 1927, the General Seafoods Corporation chartered successively two 60-foot boats which dragged small mesh otter trawls in the Gulf of Maine off the New Hampshire and southern Maine coasts. The fishery was confined to the region east of Jeffrey's Ledge and between Boon Island and Thatcher Island. Four trips were made. The first one-day trip yielded about 100 pounds of shrimp from depths of 20 to 60 fathoms on various types of bottom. The second voyage resulted in a one-day catch of 890 pounds from six drags on mud bottom 50 to 65 fathoms deep. A 900-pound catch was made in four drags at depths of 85 to 100 fathoms on mud bottom on the third trip. The fourth voyage resulted in a 1,700-pound catch in eight drags in the same locality as the third trip.

In January 1928, another dragger, using General Seafoods Corporation's nets, caught as high as 2,000 and 3,000 pounds per day on mud bottom at 35 to 90 fathoms in the area between Boon Island and Thatcher Island. Birdseye believed that the fishing trials indicated that large bodies of shrimps were to be found over a wide area of the Gulf of Maine, but that a great many months of effort and investigation were needed before a dependable supply of shrimps would be guaranteed. The results of Birdseye's investigation are mentioned by Johnson and Lindner (1934).

No great exploitation of the shrimp fishery followed the General Seafoods' experiments.



WEIGHING FRESH SHRIMP AT NEW HARBOR, MAINE. THE NEW ENGLAND NORTHERN SHRIMP FISHERY HAD A REMARKABLE DEVELOPMENT FROM 1933 TO 1945, BUT AFTER THAT YEAR THE FISHERY STEADILY DECLINED.



## OTHER NORTHERN SHRIMP SURVEYS

The next development in the history of this fishery has been given in some detail by Hjort and Ruud (1938) and Bigelow and Schroeder (1939). Johan Hjort, widely known for his founding and promotion of the Norwegian shrimp fishery, was a visitor to this country in 1936. During his stay, he was able to make a brief survey of some of the shrimping areas in the Gulf of Maine. With the cooperation of the Woods Hole Oceanographic Institution, the research ship Atlantis was used for this exploratory investigation in August 1936. According to Hjort and Ruud, "The aim of this cruise was, in particular, to investigate if prawns were to be found in abundance off the Atlantic coasts of North America, and if there corresponded to these occurrences similar conditions to those which we have been able to examine in the Skager Rack and the junction of these waters with the North Sea." The Atlantis found Pandalus to be most abundant in the same general area where the General Seafoods' boats had made their best hauls. Bigelow and Schroeder have made detailed analyses of the 22 trawl-hauls of the Atlantis. These authors have estimated the shrimp catches (adjusted to a 60-minute tow with an 82-foot trawl) to be as high as 168 liters (about 210 pounds) per hour. In the opinion of Hjort and Ruud, such a catch would be a particularly good one in Norway or Sweden.

Table 2 - Yield of the North Atlantic <u>Pandalus borealis</u> Fishery, 1928-50						
Year	Maine			Massachusetts		
	Catch Pounds	Value Dollars	Price per Pound	Catch Pounds	Value Dollars	Price per Pound
			Cents			Cents
1928	-	-	-	(3/)	-	-
1929	17	1	5.9	-	-	-
1931	-	-	-	-	-	-
1932	-	-	-	-	-	-
1933	-	-	-	40,900	2,045	5.0
1935	-	-	-	-	-	-
1937	200	3	1.5	6,800	475	7.0
1938	82,500	5,691	6.9	23,200	1,930	8.3
1939	18,300	766	4.2	36,100	1,115	3.1
1940	6,700	303	4.5	2,700	170	6.3
1941	57,717	2,332	4.0	-	-	-
1942	109,100	3,971	3.6	2,000	131	6.6
1943	291,700	14,305	4.9	3,200	277	8.7
1944	457,900	20,841	4.6	3,700	224	6.1
1945	580,900	29,050	5.0	1,100	112	10.9
1946	161,500	8,076	5.0	4,400	561	12.7
1947	193,800	10,571	5.5	500	63	12.6
1948	27,300	3,120	11.4	-	-	-
1949	9,900	1,806	18.2	-	-	-
1950	7,359	1,417	19.3	-	-	-

- NOT AVAILABLE OR NONE REPORTED.

1/ FROM ANNUAL STATISTICAL REPORTS OF THE U.S. BUREAU OF FISHERIES AND U.S. FISH AND WILDLIFE SERVICE.

2/ ONLY CATCHES OF SHRIMP BY OTTER TRAWL ARE CONSIDERED AS PANDALUS BOREALIS. DIP-NET CATCHES ARE FOR OTHER SMALL SPECIES, USED AS FISH BAIT.

3/ AN UNDETERMINED POUNDAGE WAS CAUGHT BY A GLOUCESTER, MASSACHUSETTS, DRAGGER IN JANUARY. SEE BIRDSEYE (1928).

The results of the Atlantis trip were encouraging, and the time seemed propitious for a campaign to stimulate the dormant shrimp fishery. Through the co-operative efforts of Hjort, the United States Bureau of Fisheries, the Fishermen's Relief Corporation of Portland, Maine, and the Federated Fishing Boats of New England and New York, Inc., the boat New Dawn was outfitted and began to catch shrimp as a practical demonstration that shrimp fishing could be profitably conducted in New England. Considerable publicity was given to this project (Anon. 1936). Walford (1936) presented information on the fishing efforts and gave detailed descriptions of the fishing gear and its operation. He also described the methods for preparing the shrimp for market.

Walford prepared a chart of the localities in which the shrimp were caught by the General Seafoods Corporation's boats, the Atlantis, the New Dawn, and other fishing vessels. This revealed that the four exploratory boats had dragged primarily in depths of over 50 fathoms during the summer months. These boats did not operate their fishing gear along the coast in the shallower water. However, according to the chart, winter catches of over 30 pounds per hour were made by other boats in fairly shallow water between Pemaquid Point (Maine) and Gloucester (Mas-

sachusetts). The fishery later developed along these inshore areas rather than in the deeper water regions, which had received the great part of the investigational efforts.

Although it had been demonstrated that commercial quantities of shrimp could be caught and much favorable publicity had been given the new potential fishery, a flourishing business did not evolve immediately. The fishing industry was not yet ready to expand into the new field, and the consuming public was not yet prepared to absorb more than a small production of the Northern shrimp.

#### FIRST LARGE-SCALE FISHERY FOR NORTHERN SHRIMP

The first large-scale fishery for Northern shrimp began the first quarter of 1938. Shrimp nets were supplied by the Fishermen's Relief Corporation of Portland, Maine (Anon. 1938c), and thirteen boats began dragging for shrimp and landing their

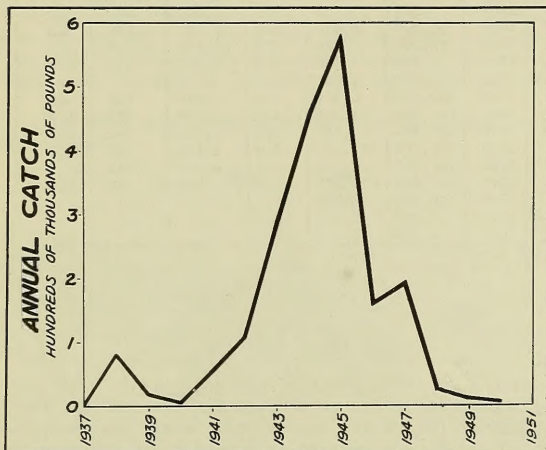


FIG. 2 - PRODUCTION OF NORTHERN SHRIMP IN MAINE, 1937-50.

a 62-foot boat, Elinor and Jean. All trips were of one-day duration and were made primarily off Wood Island, about seven miles southwest of Cape Elizabeth, Maine (figure 3). Several small boats, around 30 feet in length, also operated in Casco Bay, near Mark Island, but we have no records of their catches, which were probably small.

This winter shrimp fishery in the Portland (Maine) region was definitely seasonal. One boat began dragging as early as January 7, but the first shrimp were not brought in until February 11. The last shrimp catch was on April 13, although some dragging was continued until the end of April. The seasonal peak occurred in the middle of March. Fifty-eight percent of the total catch was made in the two-week period March 8-21. This fishery has been dependent upon egg-bearing female shrimp, which accumulated on certain inshore grounds prior to and during the egg-hatching period. As the egg hatching neared completion, the number of shrimp available to the fishermen declined markedly.

Some shrimp were also caught at this time by small boats near Pemaquid Point and New Harbor, Maine (figure 3). From the United States Bureau of Fisheries statistical records, it appears that approximately 1,500 pounds were produced in that region.

catches at Portland. These boats ranged in length from 46 to 73 feet. Incomplete records collected by the local office of the United States Bureau of Fisheries in 1938 show a total poundage of 12,115 in February, 59,181 in March, and 2,150 in April. Apparently the greatest producer was the Annie Louise, a 46-foot boat, which caught 24,890 pounds in 15 shrimp-yielding trips. A few daily catches exceeding 5,000 pounds were taken by this vessel and by the Alice M. Doughty II, a 73-foot ship. Unfortunately, complete records do not exist for the latter vessel. A fairly high production was the 14,875 pounds caught in 12 trips by



In view of the difficulties encountered in initiating an otter-trawl fishery on relatively unfamiliar bottoms, this first organized attempt could be considered fairly successful. An average value of 7.5 cents per pound was obtained by the fishermen. Some of the shrimp were sold fresh locally. However, as the available markets were unable to sell large quantities of the new shrimp (which were much smaller than the popular Southern shrimp), most of the Portland landings were frozen for future use. Furthermore, the New England public was familiar with the

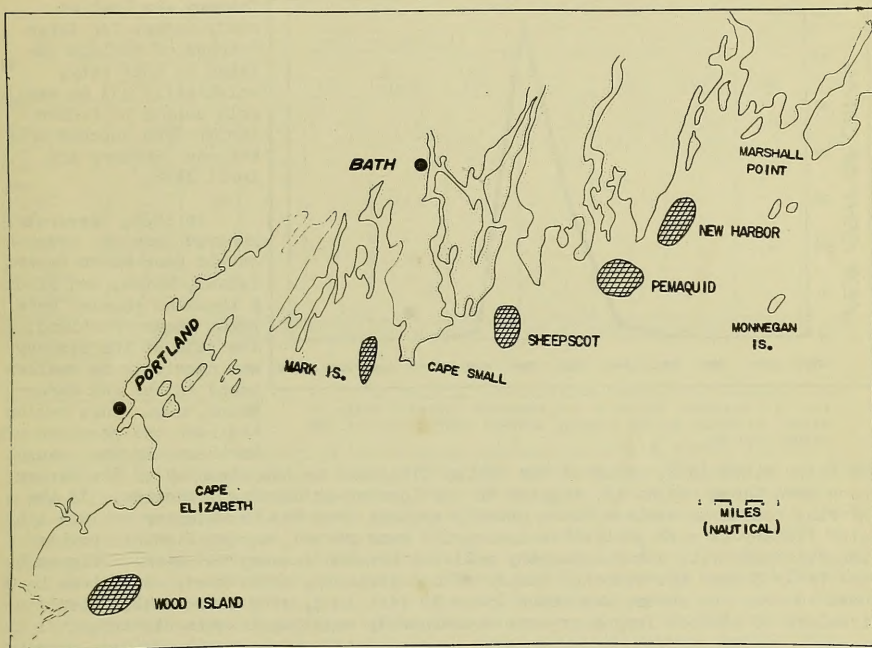


FIG. 3 - PRESENT SHRIMP FISHING GROUNDS OFF THE MAINE COAST.

green-colored Southern shrimp rather than the red-hued Northern species. It seemed evident that during the winter a supply of shrimp could be produced in excess of the local market demand. Consequently, the Maine Department of Sea and Shore Fisheries increased its efforts to publicize the Maine shrimp.

In anticipation of increased utilization in the future, an attempt was made to learn if the fishery could be established on a year around basis. The Maine Department of Sea and Shore Fisheries, in cooperation with the United States Bureau of Fisheries, began further exploratory fishing with two boats during July and August of 1938 to determine whether commercial quantities of shrimp could be located along the Maine coast during the summer (Anon. 1938a, b, c). One small boat, the Flora C., made 55 tows at depths of 43 to 102 fathoms, but was unable to locate any large amounts. The greatest catch was equivalent to 57 pounds of shrimp per hour of dragging and was made at 67 fathoms. The average catch was about eight pounds per hour. The Mina J., another small fishing boat, dragged in depths of less than 55 fathoms along the coast of Maine, but was similarly unsuccessful. From these experiments it was concluded that shrimp fishing did not seem profitable in Maine during the summer months.

## DEVELOPMENT OF THE FISHERY

In the following shrimp season, the winter and early spring of 1938-39, the fishery was rather dormant. Portland boats which had dragged for shrimp in 1938 had become engaged in the rosefish (*Sebastes marinus*) fishery. This formerly neglected fish was then beginning its meteoric rise to its present great importance in the New England fisheries. A further deterrent to a Portland shrimp

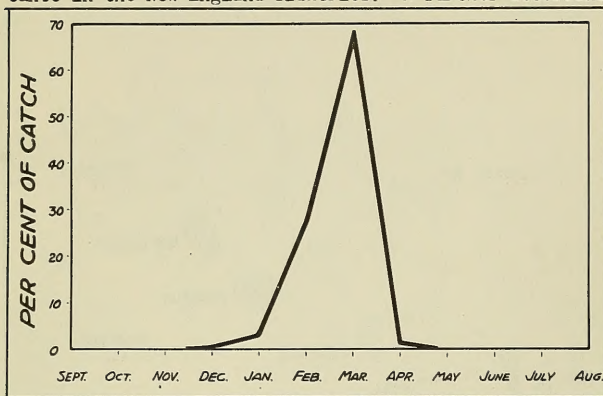


FIG. 4 - SEASONAL TREND OF THE NORTHERN SHRIMP FISHERY IN MAINE, AS SHOWN BY THE AVERAGE MONTHLY PRODUCTION FOR THE YEARS 1937-48.

fishery was that no ready market for large catches of shrimps existed in that city, which still had an available supply of frozen shrimp from catches made between February and April 1938.

In 1939, several hundred pounds were caught near Mount Desert Island, Maine, and about a thousand pounds were taken near Portland. The bulk of the fishery was carried on by smaller boats in the New Harbor, Maine, area. This region has been the producer of Northern shrimp caught

in Maine since 1939. Many of the shrimp fishermen in the vicinity of New Harbor have been those ordinarily engaged in the lobster or herring fisheries. As the herring season in western Maine usually extends from May to December and the lobster fishery is most productive during the same period, shrimp fishing provided the fishermen with a supplementary activity between January and April. Figure 4 and table 3 show the seasonal nature of the shrimping activities. A typical boat used to drag for shrimp was about 25 or 30 feet long, with a few small otter trawlers of 40-foot length or more occasionally engaging in this fishery.

From 1939 to 1942, the catches of shrimp were largely limited by the demand. For example, a boat might catch 500 pounds of shrimp, but three or four days might elapse before all could be sold and another trip made. Some fishermen would fish for several hours and then peddle their catches for the next few days in the neighboring towns until all of the shrimp were sold. Occasionally, the shrimp would remain unsold until they had to be dumped. By 1941, an increased local demand for Maine shrimp had developed and larger quantities were being home-canned by consumers. While the catch rose to about 58,000 pounds that year, there was still no ready market for all the shrimp which could be caught by the boats intermittently engaged in this fishery between January and April. But in 1942 there was a greater demand for shrimp for fresh consumption and home canning. The fishermen also had another outlet for their catches when a cannery at Friendship, Maine, began to process shrimps.

After 1942, the fishery expanded rapidly for the next few years, as demonstrated by table 2 and figure 2. Several more canneries began processing shrimp, and quantities of whole shrimp and shrimp tails were also quick-frozen. By 1944, the fishery was no longer limited by the demand, but instead was governed by the supply available to the fishermen. This condition has prevailed to the present.



When the market began to absorb all the catches after 1943, fishing activities increased. The fishermen operated longer hours and made larger catches. Daily landings of 2,000 pounds per boat were not rare, and as high as 3,000 pounds were taken on some one-day trips. It was natural that these successful operations would attract more fishermen, and consequently the fleet expanded until 1944, when 25 boats were dragging on the five principal Maine shrimping grounds. In 1945, a further increase occurred and the fleet numbered 31 boats.

Table 3 - Yield of the Maine *Pandalus borealis* Fishery in Pounds by Months, 1939-1949

	Year										
Month	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949
January	6	156	980	10,056	6,819	12,715	21,760	580	-	-	-
February	1,684	181	39,411	61,306	28,111	111,631	205,566	2,622	28,907	1,600	5,500
March	16,924	6,886	13,198	3,865	239,102	258,676	323,670	158,313	162,503	24,437	4,200
April	1,250	1,032	291	-	17,400	6,210	303	-	2,289	1,288	-
May	-	-	32	-	-	-	-	-	-	-	-
June	-	60	-	-	-	-	-	-	-	-	-
July	-	-	-	-	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-	-	-	-	-
November	-	-	-	-	81	-	-	-	-	-	-
December	-	295	3,805	196	-	5,485	-	-	-	-	-
Total	19,864	8,610	57,717	75,423	291,513	394,717	551,299	161,515	193,699	27,325	9,700

- NONE REPORTED.

1/YEARLY TOTALS (AS COMPILED BY MAINE DEPARTMENT OF SEA AND SHORE FISHERIES) DO NOT IN ALL CASES AGREE WITH THOSE OF TABLE 2.

When it became difficult to catch large quantities of the shrimp in 1946, there was a marked decline in fishing activity. As is the usual practice of those engaged in seasonal fisheries, most of the fishermen do not begin to use their gear until there is some assurance that profitable catches can be made. At the beginning of the season, a few boats will spend considerable time and effort in attempts to locate shrimp concentrations. The remainder of the fleet will begin to fish only when worthwhile catches are landed and it has become evident that the shrimping season is again at hand. In 1946 and subsequent years, the large masses of shrimp so prevalent in earlier years have not been located on the customary grounds, and the fleet has declined in both numbers and activity. During 1949, another poor year, only about 12 boats fished intermittently during the season. There were, however, at least 25 other boats which would have operated if profitable catches could have been made.

#### FISHING GEAR AND METHODS

The fishing gear and methods used in the Northern shrimp fishery are not greatly different than those used in otter-trawling operations. The size and power of the boats have governed the size of the net. A net in common usage has been one with a 40-foot footrope. The stretched-mesh size in the cod end and in part of the back and belly of the net is  $1\frac{1}{2}$  inches. The remainder of the net, including the wings, has a 2- $\frac{1}{8}$  inch mesh. There are in operation other sizes and shapes of nets. Some are made by the fishermen according to their own preferences. Many of the nets have been equipped with wooden rollers on the footrope. Others have loops of chain suspended on the footrope. To my knowledge, the sweepnet mentioned by Walford has not been used. Fishing has been carried on during the daylight hours at depths of about 20 to 40 fathoms. Night trawling has not been tried, because the boats are not equipped with flood lights for working at night and the grounds are located with reference to landmarks not visible at night. The towing speed

has been about  $1\frac{1}{2}$  to 2 miles per hour. While speeds up to 4 miles per hour capture more fish, they are evidently less efficient in catching shrimps. Ropes, with or without bridles, have been commonly used to tow the nets, although wire towing lines are used by several of the larger boats.

### OTHER FISH AND SHELLFISH CAUGHT IN SHRIMP HAULS

The quantities of fish and invertebrates taken incidental to the shrimping operations have never been large or of much importance to the fishermen. Sometimes a few legal-sized lobsters are caught and sold, but this is not a common occurrence. The quantities of fish caught have been relatively small. Table 4 reveals the numbers, sizes, and weights of commercially-important species taken during a total of six hours of dragging during March 1947. Of the 13 edible species, only the smelt, dab, and blackback were large enough to be marketed. The total shrimp catch for the two days was 1,160 pounds, while the commercially-

Table 4 - Commercially-Important Species of Fish Caught March 13 and 20, 1947

Species	Total Catch		Range in Length		Minimum Marketable Length <sup>1</sup>	Marketable Catch		Percent Marketable	
	No.	Lbs.	Inches	Inches	Inches	No.	Lbs.	No.	Wgt (lbs.)
Herring ( <i>Clupea harengus</i> ) .....	288	6.8	2.6 - 8.8	5	2	0.0	0.0	0.0	0.0
Alewife ( <i>Pomolobus pseudoharengus</i> ) .....	166	2.3	2.8 - 4.8	9	0	0.0	0.0	0.0	0.0
Smelt ( <i>Osmerus mordax</i> ) .....	7	.3	5.6 - 6.2	5	7	0.3	100.0	100.0	100.0
Ocean Perch or rosefish ( <i>Sebastes marinus</i> ) .....	63	.3	1.9 - 3.2	8	0	0.0	0.0	0.0	0.0
Whiting ( <i>Merluccius bilinearis</i> ) .....	83	1.4	3.4 - 5.8	8	0	0.0	0.0	0.0	0.0
Pollack ( <i>Pollachius virens</i> ) .....	24	1.8	5.7 - 7.0	12	0	0.0	0.0	0.0	0.0
Cod ( <i>Gadus morhua</i> ) .....	1	.2	8.8 - 8.8	12	0	0.0	0.0	0.0	0.0
Haddock ( <i>Melanogrammus aeglefinus</i> ) .....	2	.1	5.3 - 5.7	12	0	0.0	0.0	0.0	0.0
White hake ( <i>Urophycis tenuis</i> ) .....	11	1.1	6.7 - 8.6	12	0	0.0	0.0	0.0	0.0
Squirrel hake ( <i>U. chusa</i> ) .....	26	.6	3.4 - 6.8	12	0	0.0	0.0	0.0	0.0
Dab ( <i>Hippoglossoides platessoides</i> ) .....	97	9.7	3.0 - 13.9	10	6	2.8	6.2	29.3	29.3
Blackback flounder ( <i>Pseudopleuronectes americanus</i> ) ..	207	46.2	2.9 - 14.6	10	35	23.8	16.9	51.5	51.5
Grey sole ( <i>Glyptocephalus cynoglossus</i> ) .....	34	.5	2.6 - 4.0	10	0	0.0	0.0	0.0	0.0
Total .....	1069	71.3				48	26.9	4.5	37.7

<sup>1</sup> THESE LENGTHS VARY WITH THE PREVAILING MARKET. IN TIMES OF SCARCITY, SOME SMALL FISH MAY BE MARKETED. AT THE TIME OF THE OBSERVATIONS, FISH LESS THAN THE MINIMUM SIZE GIVEN WOULD NOT BE MARKETABLE IN NEW ENGLAND.

<sup>2</sup> THE HERRING WERE IN SUCH A THIN CONDITION AT THE TIME OF CAPTURE THAT THEY WERE OF NO VALUE COMMERCIALY.

important fish amounted to less than 27 pounds. Figure 5 shows the length frequencies of nine of the species. These data portray the size composition of the average catch fairly well, although I have occasionally seen large specimens of rosefish and whiting landed with the shrimp. It is evident that no great numbers of small commercially-valuable fish have been destroyed in the shrimp fishery. The shrimp and fish are sorted soon after being brought on deck, and the smaller flatfish are generally thrown back into the sea. No fish scales were collected and no attempt was made to deduce the ages from the length frequencies. The relatively small samples and the probable selectivity of the net introduce too great an error for length frequency-age analyses. The trash fish caught during the two days have been listed in table 5. Information on the unusual specimens taken at this time have been recorded by Scattergood (1948). Prior to the summer of 1949, none of the trash species had any value, except occasionally as lobster bait, but now all could be sold to fish-meal producers. The quantities taken in shrimp trawling would be low, however, for the two days' activities caught only 79 pounds. With an increase in the towing speed more fish could be caught, but probably not enough to warrant the probable decrease in the shrimp catch. With the present market of one cent or less per pound there is little incentive for small boats to capture trash fish during the shrimp season.

### METHODS OF HANDLING ABOARD THE VESSEL

Since there is generally not a great amount of other invertebrates or fish mixed with the shrimp, the operation of sorting and preparing the shrimp for the



buyer is not a great task. Usually the catch of a one-hour tow can be culled completely before the next tow is finished. Shrimp are fairly free of mud, for when the net is brought to the surface it is towed through the water until most of the mud has been washed out. After removing the shrimp from the catch, the fishermen usually wash them in sea water and remove most of the small or broken shrimp. The size of the catch and the attitude of the buyer influence the thoroughness of the culling activities.

In Maine, the Northern shrimp are not cooked aboard the boats, as is a common custom in many other regions, such as British Columbia (Anon. 1945); Puget Sound, Washington (Smith 1937); and Norway (Walford 1936). The weather is cool, usually below freezing, during the shrimp season, and there is little danger of spoilage

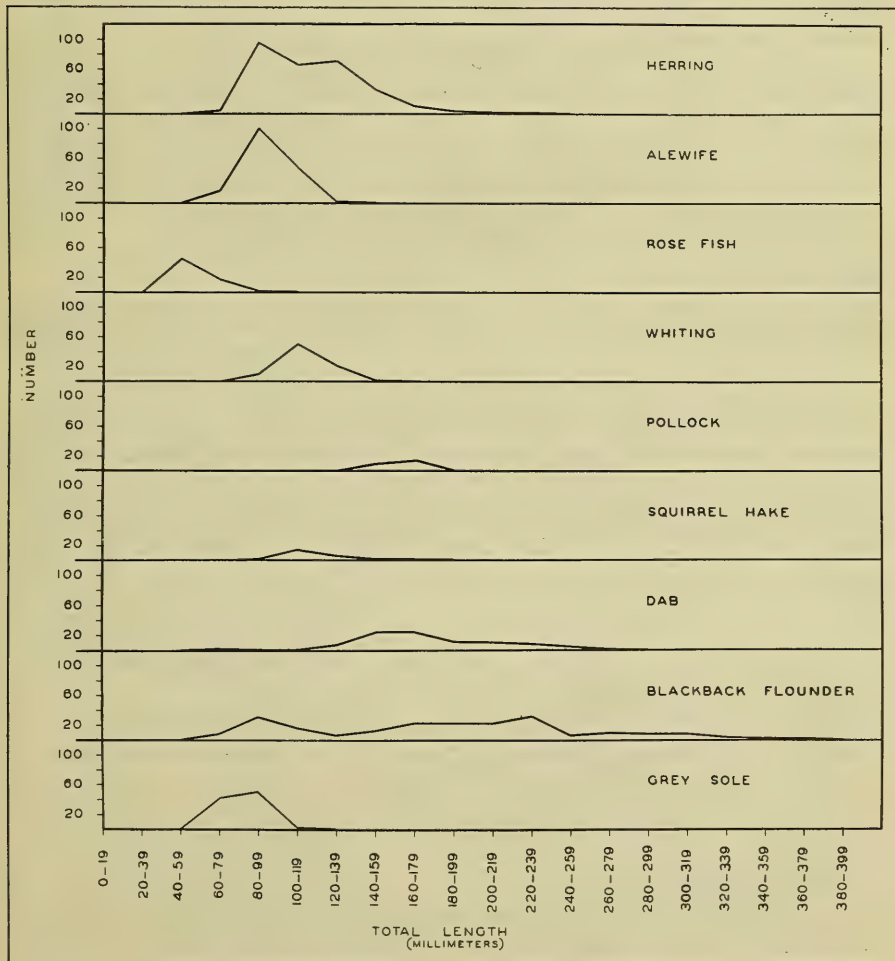


FIG. 5 - SIZE COMPOSITION OF NINE COMMERCIALY-IMPORTANT SPECIES OF FISH TAKEN BY A SHRIMP BOAT IN 6 HOURS OF DRAGGING IN MARCH 1947.

between the catching and landing of these crustaceans. None of the boats have sufficient space in which to install cooking equipment large enough to boil the

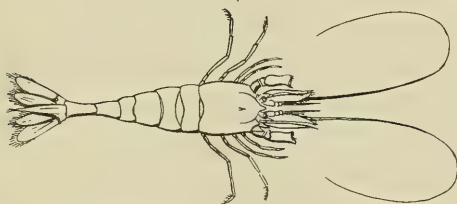
Table 5 - Trash Fish Caught March 13 and 20, 1947

Species	Total Catch		Range in Length Inches
	No.	Lbs.	
Little skate ( <i>Raja erinacea</i> )	21	22.3	7.5 - 21.8
Big skate ( <i>R. diaphanes</i> )	11	21.4	14.8 - 23.3
Prickly skate ( <i>R. scabrata</i> )	7	2.2	9.2 - 13.5
Pipefish ( <i>Syngnathus fuscus</i> )	2	(1/)	7.1 - 8.6
Silverside ( <i>Menidia notata</i> )	33	0.4	3.3 - 5.1
Mailed sculpin ( <i>Triglops ommatistius</i> )	3	(1/)	2.9 - 3.3
Shorthorn sculpin ( <i>Myoxocephalus scorpius</i> )	2	0.9	8.9 - 10.4
Longhorn sculpin ( <i>M. octadecimspinosus</i> )	130	26.8	4.2 - 14.4
Sea raven ( <i>Hemitripterus americanus</i> )	5	1.7	3.7 - 11.4
Alligatorfish or sea poacher ( <i>Aspidophoroides monopterygius</i> )	12	0.1	2.9 - 5.7
Rock eel ( <i>Pholis gunnellus</i> )	1	(1/)	4.3 - 4.3
Snake blenny ( <i>Lumpenus lampetraeformis</i> )	8	(1/)	3.5 - 11.2
Shanny ( <i>Leptoclinus maculatus</i> )	10	(1/)	4.0 - 5.4
Radiated shanny ( <i>Ulvaria subbifurcata</i> )	9	(1/)	2.7 - 4.2
Wrymouth ( <i>Cryptacanthodes maculatus</i> )	3	0.7	14.6 - 16.3
Four-bearded rockling ( <i>Enchelyopus cimbrius</i> )	45	1.2	2.8 - 9.4
Sand or windowpane flounder ( <i>Lophopsetta maculata</i> )	10	0.6	4.5 - 6.0
Smoothback or eelback flounder ( <i>Licopsetta putnami</i> )	14	0.1	2.0 - 3.1
Total	326	79.8	

1/THE COMBINED WEIGHTS OF THE SIX SPECIES WAS 0.4 POUNDS. THIS IS INCLUDED IN THE TOTAL POUNDAGE.

300- to 2,000-pound catches so common in the peak of the season in the early years of the fishery.

Some conversion factors were obtained during my study of the fishery. The well-culled shrimp which I examined varied in number from 36 to 38 per pound. When the tails were removed from the raw shrimp and quick-frozen, the raw tails formed 61 percent of the total raw weight of the whole shrimp. When the raw meats were removed from the tails, it weighed about 45 percent of the raw weight of the whole shrimp. Shrimp cooked in boiling, heavily-salted water for five minutes yielded cooked tail meats which comprised about 32 percent of the raw weight. If the shrimp were not thoroughly culled by the fishermen and the meats were not carefully removed from the shells, the percentage recovery of meats dropped accordingly. In commercial practice during the war years, the operator of a Maine shrimp cannery claimed that his recovery of cooked meats was just slightly over 20 percent of the total raw weight.



CRAGO SEPIEMSPINOSUS  
LENGTH 40 TO 70 MM. (ABOUT 1.6-2.8 INCHES).

#### COMPOSITION OF SHRIMP CATCH

On March 14, 1949, I accompanied a New Harbor fisherman to obtain observations on the composition of the shrimp catch. Table 6 shows the species and sex of the shrimps taken on this trip.

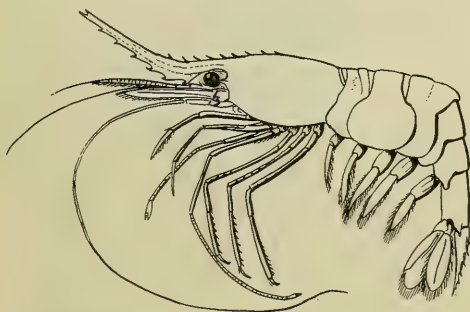
In general, I believe that these data are typical of the average catch, for these shrimps were caught during the peak of the 1949 season. Furthermore, the compo-



sition of this shrimp catch did not seem to vary markedly from my casual observations on numerous trips aboard shrimping boats since 1939. Of the five species only the Pandalus borealis females have been considered as large enough to be sold. Most of the specimens of both Dichelopandalus leptoceros and Pandalus montagui are larger than many shrimp species used for food in other parts of the world, but in the Maine fishery they have been considered as trash. In England, the latter species is taken commercially (Jenkins 1920). Crago septempinosus, a species similar in size and appearance to the commercially-valuable California shrimps of the genus, is also discarded in Maine.

Figure 6 shows the size composition of the male and female Pandalus borealis in the March 14 sample. The lengths are measured from the posterior margin of the eye socket to the end of the tail. It is evident that the males are distinctly smaller than the females. This size difference is explained by the dominant protandrous hermaphroditism of the species. (These shrimp have both male and female sex organs maturing at different stages.) Berkeley (1929), studying in British Columbia, Canada, discovered that this species of shrimp and other species of Pandalidae matured first as males and then changed to females as they increased in size. In Europe, Jagersten (1936) examined P. borealis and confirmed Berkeley's findings.

Table 6 - Composition of Shrimp Caught March 14, 1949		
Species	No.	Wgt. (lbs.)
<u>Pandalus borealis</u> :		
ovigerous females .....	6,799	185.00
non-ovigerous females .....	1	1/0.01
males .....	261	0.71
<u>P. montagui</u> :		
ovigerous females .....	23	0.24
non-ovigerous females .....	1	(2/)
males .....	2	(2/)
<u>Dichelopandalus leptoceros</u> :		
ovigerous females .....	180	1.13
non-ovigerous females .....	236	0.42
males .....	314	0.62
<u>Lebbeus groenlandicus</u> :		
ovigerous females .....	1	0.01
<u>Crago septempinosus</u> :		
ovigerous females .....	2	0.02
males .....	7	(2/)
Broken bodies and fragments of all species .....	-	0.36
<b>Total .....</b>	<b>7,827</b>	<b>188.52</b>
1/ THIS INCLUDES ALSO THE WEIGHTS OF <u>P. MONTAGUI</u> MALES AND NON-OVIGEROUS FEMALES, AND <u>Crago septempinosus</u> MALES.		
2/ INCLUDED WITH THE WEIGHT FOR <u>PANDALUS BOREALIS</u> NON-OVIGEROUS FEMALES.		



PANDALUS MONTAGUI  
LENGTH 50 TO 110 MM. (ABOUT 2.0-4.3 INCHES).

Other detailed observations on the growth and sexual changes of this species in Norway have been made by Hjort and Ruud (1938), and Rasmussen (1942, 1945, 1946, 1947). The last investigator demonstrated that the growth rate of the shrimp varies according to the environment in which it lives. The Norwegian P. borealis at Spitzbergen matures first as a male at the age of three years, while in some waters of southern Norway it reaches the same size and maturity at one year of age. The Spitzbergen shrimp functions as a female when five years old and some southern Norway shrimps become females when two years old (Rasmussen 1942). It is

not possible at this time to present similar information on the Maine shrimps, for the age and growth of shrimps must be measured by the analysis of length-frequency data collected during the entire year, and our collections have been confined to the month of March. Of the Norwegian regions in which shrimps have been studied, the ecological conditions of the waters of southern Norway are more similar to those of Maine and, therefore, the rates of development may be similar in the two areas.

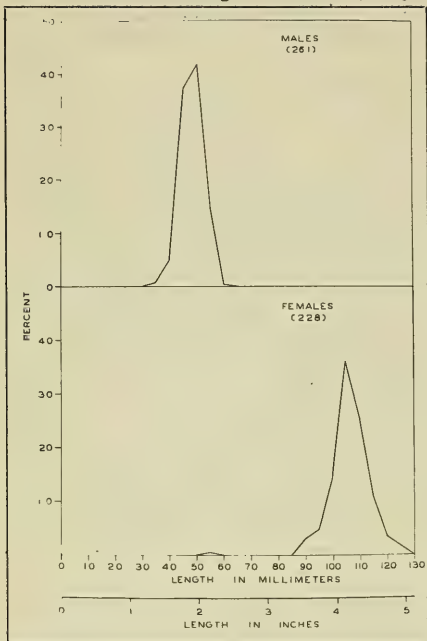
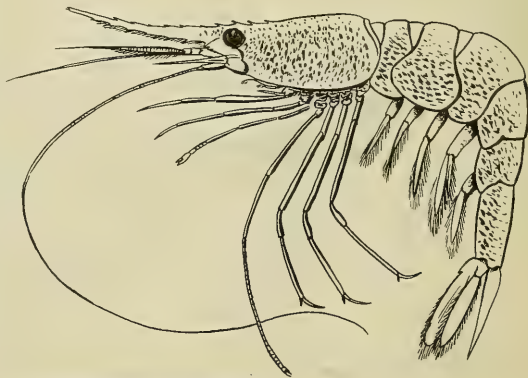


FIG. 6 - SIZE COMPOSITION OF A SAMPLE OF THE PANDALUS BOREALIS CAUGHT MARCH 14, 1949.

#### PROBABLE REASONS FOR DECLINE OF NORTHERN SHRIMP FISHERY

A most intriguing question is why so few shrimp have been found during the past several years on the formerly productive shrimping grounds. There is not enough information available to evaluate the probable reasons for this phenomenon. However, brief comments are appropriate concerning the factors which may have influenced the availability of these crustaceans. First, it is likely that shrimp populations are subject to cyclic fluctuations, and the bottom of the cycle may now be at hand. This fishery is of such recent origin that evidence of cyclic

The life histories of the other shrimp taken with Pandalus borealis are not as well known. Jägersten (1936) has stated that among P. montagui there are primary females which have never been males, and males which change to females (protandrous hermaphroditism). According to him, P. borealis also has these same classes of individuals, but the primary females are fewer in number than in P. montagui. As shown in table 6, the catch of P. montagui was not large enough to supply adequate information on the relative proportions of these three classes. The length frequencies of male and female Dichelopandalus leptoceros are shown in table 6 and figure 7, and it appears that this species, like the Pandalus propinquus mentioned by Jägersten (1936), may not be hermaphroditic, since both males and females occur at all sizes. However, further study would be necessary to confirm this possibility.



DICHELOPANDALUS LEPTOCEROS  
LENGTH FROM 50 TO 98 MM. (ABOUT 2.0-3.9 INCHES).



abundance cannot be substantiated. Second, instead of migrating inshore to the known fishing areas in February to April, the shrimps may now be appearing on other areas not yet exploited. Until extensive experimental fishing operations are carried out along the Maine coast we will know little of the distribution of the shrimp, and therefore, we will have no idea whether or not annual migrations are erratic. Third, there is the possibility that overfishing has occurred. If the decline in the yield of the Maine fishery in the four shrimping areas has been caused by the catching of too many mature shrimp, this would indicate that the shrimp populations in those waters were not a part of a homogeneous Gulf-of-Maine population, but instead represent one or more independent stocks. It would indeed be difficult to imagine that the fishery for shrimp along the Maine coast would seriously affect the abundance of a single, large Gulf-of-Maine population. Fourth, since shrimp are associated with rosefish in deep water for a greater part of the year, it is probable that many of the shrimp, both large and small, are damaged in the rosefish nets before they can escape through the cod ends. This resultant drain on the shrimp population might be much greater than realized. Of course, there are other theoretical explanations, such as possible oceanographic changes adversely affecting the survival of the shrimp, increased natural mortalities through greater competition for food, or increased predation, etc., but unfortunately, we have no evidence to indicate whether or not such conditions have occurred. The reasons for the decline must, consequently, remain obscure for the present.

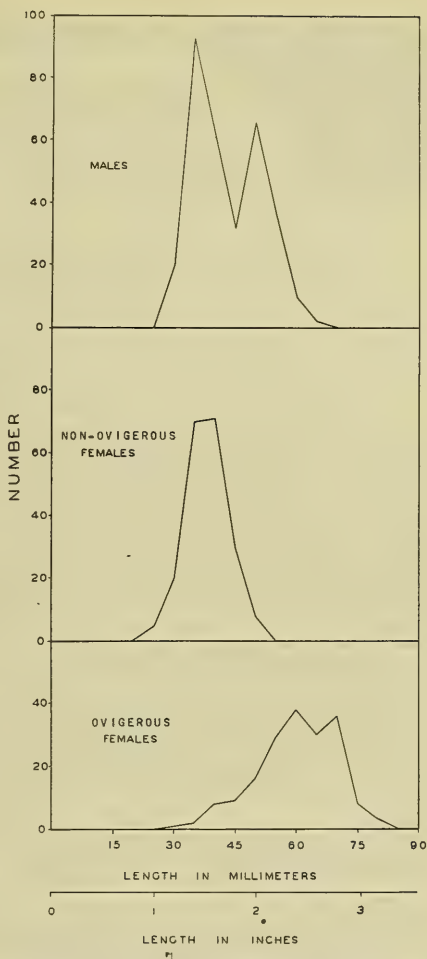
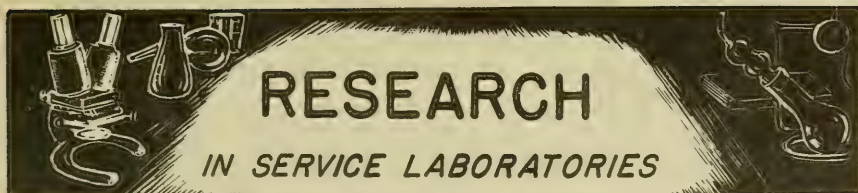


FIG. 7 - SIZE COMPOSITION OF THE DICHELOPANDALUS LEPTOCEROS CAUGHT MARCH 14, 1949.

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December 1951

**REFRIGERATION: Storage Conditions on Quality of Frozen Fish:** During a survey trip it was noted that quantities of whole frozen fish were being stored in cold-storage rooms designed primarily for storage of packaged foods and in which air circulation is provided by blowers. This practice results in a very rapid desiccation of the whole glazed fish. The purpose of this project is to determine what simple protective means can be taken to prevent the rapid loss of ice glaze and desiccation of the product.

Preliminary results have been obtained on the effect of different methods of protecting frozen fish against loss of ice glaze. The results are based upon 53 days storage of fish in the laboratory cold-storage room, refrigerated by means of a blower unit providing relatively rapid air circulation. The results indicate that relative high protection against loss of ice glaze may be produced by several simple means of cutting down direct contact of the flowing air, with the surface of the fish. Samples of glazed frozen fish merely wrapped in ordinary kraft paper showed only 20 percent of the loss of glaze which took place in completely unprotected samples. Placing of the glazed fish in wooden boxes without a paper liner but with the lid nailed tightly in place reduced the loss of glaze to less than 5 percent of that occurring with unprotected fish. Samples wrapped in heavy waxed paper or those placed in polyethylene bags showed practically no loss whatever after almost two months storage. These preliminary results indicate that the problem of protection of glazed fish against moisture loss on a laboratory basis is a very simple one; however, costs involved in the application of the procedures on a commercial scale may be prohibitive. Methods of practical application will be considered. (Seattle).

\* \* \* \* \*

**COMPOSITION: Composition and Cold-storage Life of Fresh-Water Fish:** Data on the composition of the first six samples of yellow perch and whitefish are presented in the following table:

Composition of First Six Samples Analyzed for Each of Two Species of Lake Erie Fish

Species of Fish	Sample Number	Length	Weight	Fillet Yield	Moisture	Fat	Protein	Ash
		Centimeters	Grams	Percent	Percent	Percent	Percent	Percent
Yellow perch ( <i>Percha flavescens</i> )	1	26.5	285	41.0	79.3	0.80	20.1	1.43
	2	24.0	252	38.9	79.8	0.90	19.3	1.14
	3	23.5	232	37.5	78.7	0.95	19.2	1.24
	4	23.0	202	39.6	78.5	0.95	19.9	1.20
	5	24.5	235	36.2	79.4	0.84	19.9	1.36
	6	24.5	252	42.3	78.7	0.81	20.3	1.29
Whitefish ( <i>Coregonus clupeaformis</i> )	1	50	1390	51	66.6	17.1	17.6	1.05
	2	45	1080	41	72.5	8.0	19.7	1.09
	3	45	975	45	71.2	10.7	18.8	1.19
	4	41	845	44	73.9	8.70	18.8	1.05
	5	41	835	39	72.7	8.37	18.9	1.15
	6	38	625	55	75.9	5.68	18.3	1.04

(Seattle).

\* \* \* \* \*

## TECHNICAL NOTE NO.16--A SIMPLE PENETROMETER FOR THE MEASUREMENT OF TEXTURE CHANGES IN CANNED SALMON

The need for a simple objective test to determine texture changes in canned fish presented itself in the study by Stansby and Dassow (1951) on the use of frozen salmon for canning. Storage of frozen salmon for as little as one week prior to canning produced a noticeable change of texture in the resulting canned product. In all cases the texture change was one of firming or toughening. In some instances the change was a desirable one, but for the greater part it was undesirable. Increasing the storage time of the frozen salmon prior to thawing and canning appeared to increase the undesirable texture change. It was thought that use of a penetrometer similar to that described by Charnley and Bolton (1938) could be used to correlate taste-panel texture ratings with penetration depth of a "needle" into the canned fish. Inasmuch as the Charnley instrument was found to be available only on special order from an instrument maker, it was decided to design a simplified-type penetrometer (figure 1) which could be constructed without difficulty in the average laboratory shop.

The primary use of penetrometers is in the road-building industry for testing materials such as tar and asphalt, which are homogeneous in regard to texture. Tests made on difficult portions of these samples should give nearly identical results. Penetrometers are also used in the food industries, for example in the canning or freezing of peas (Anon. 1951) to determine the optimum texture for processing and in the manufacture of cheese to determine the toughness of the product (Jacobs 1944).

Canned fish differs in respect to tar and asphalt in that it is non-homogeneous in texture. To provide an average penetration value many readings must be taken over the surface of the sample. In order to minimize the number of readings required, penetrometers for application to food products are often of the multineedle type, such as the Charnley penetrometer.

Ten, Roberts No. 2, standard penetrometer needles were used in this instrument. Adaptation of the instrument for use with products other than canned salmon could be made by varying the number of needles employed. Approximate dimensions of the needles were 1.5 inches long and 0.04 inches in diameter. The needle point is described geometrically as the frustum of a cone approximately 0.25 inches in length. The needles were arranged symmetrically in a disc of stainless iron and shrink fitted into place (figure 2). The arrangement of the needles in the disc was such that contact of the needles with the backbone could be avoided when making a test. The disc, which shall be referred to as the penetrometer head, is approximately 3.2 inches in diameter and 0.3 inches thick. The total weight of the penetrometer head, needles, and shaft is 500 grams. Although the head of the instrument described was designed to fit 1/2-pound flat cans, the measurements of the instrument could be reduced proportionately to allow its use with 1-pound tall cans. In order to allow the head to move up or down with a minimum of friction, the monel shaft (which is

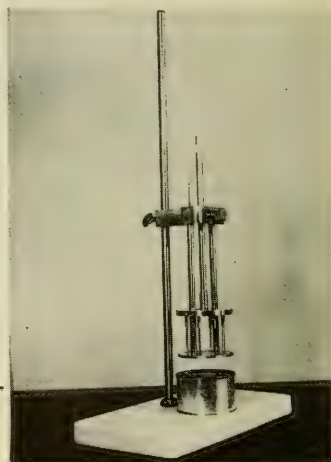


FIG. 1 - PENETROMETER DESIGNED AND USED BY THE FISHERY PRODUCTS LABORATORY, KETCHIKAN, ALASKA.



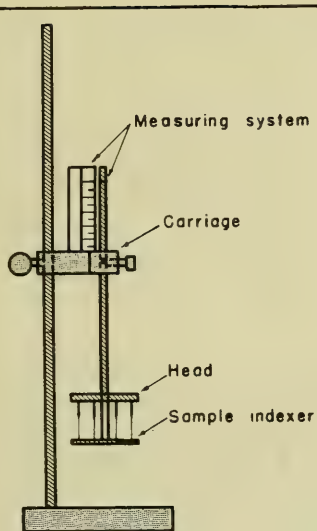
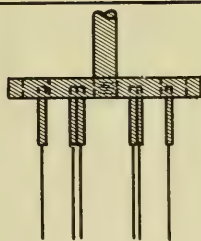
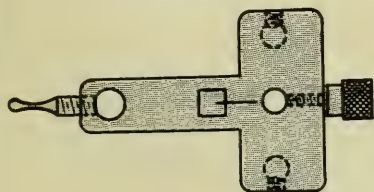


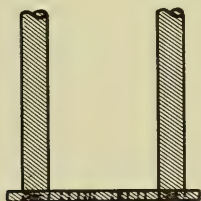
DIAGRAM OF PENETROMETER UNIT



DETAIL OF HEAD AND SHAFT



DETAIL OF CARRIAGE AND MEASURING SYSTEM



DETAIL OF INDEXER AND GUIDE RODS

FIG. 2 - DRAWINGS OF THE PENETROMETER. (DETAIL SECTIONS ARE APPROXIMATELY HALF SIZE.)

attached to the head) was provided with a poured babbitt bearing. The shaft is 10 inches long and 0.39 inches in diameter. Additional lateral stability is gained from two guide rods which also serve the purpose of supporting the sample indexer. The needles are set in the head so as to be flush with the bottom of the sample indexer.

When a reading is to be made, the carriage is lowered until the sample indexer is flush with the surface of the fish in the opened can. A short turn of a coarse-threaded screw frees the shaft and allows the penetrometer head and shaft to travel downward. A vertical millimeter scale located directly behind the shaft on the carriage and a graduation opposite the scale on the shaft comprise the measuring system. An initial reading is taken when the points of the needles are flush with the surface of the fish. Timing of the penetration period begins when the head starts its downward fall and ends 60 seconds later. At the end of the penetration period a second reading is taken, allowing the depth of penetration in millimeters to be calculated by difference.

Although the use of ten needles tends to reduce the error due to non-uniformity of the texture of the salmon within a can, it does not eliminate it. Better results were obtained if replicate

readings were made with the needles in various positions with respect to the fish. An average of the replicates was used in comparing the texture of different lots. It was found that about four replicate readings were all that could be made without re-entering holes made during previous readings. Since the texture of the salmon used in canning varies from fish to fish and even from portion to portion in individual fish, 12 cans of each series were tested to obtain average values of penetration. Thus, final comparison of the penetrometer readings between different series was based on an average of 48 readings, each reading being the penetration distance in millimeters for the entire head of 10 needles. Each reading might be considered as the average penetration of 10 needles, each needle activated by one-tenth of the total weight of the head. The table shows a series of readings taken on 12 cans of pink salmon, 4 readings being taken on each can.

Replicate Penetrometer Readings of Each of 12 Cans of Pink Salmon				
Can Number	Penetration in Millimeters			
	Replicate Number			
	1	2	3	4
1	32.5	27.0	31.0	34.0
2	27.0	29.5	27.5	30.5
3	23.0	17.0	22.0	19.0
4	26.5	26.0	28.0	29.5
5	28.5	23.5	30.0	25.0
6	19.0	21.5	20.5	20.0
7	16.0	16.0	17.5	15.0
8	19.0	14.0	23.0	16.5
9	11.5	11.5	13.0	13.5
10	20.0	22.0	23.0	20.0
11	23.0	20.0	24.0	23.0
12	13.0	13.5	11.5	13.5

Earlier tests indicated that the rate of penetration is very high at the start of the penetration period, but falls off rapidly after the first five seconds. A 60-second penetration period has been used for all work done to date with this instrument. This allowed ample time for the rate of penetration to decrease to a very small value. It is quite probable that the time of penetration could be reduced to as little as ten seconds and still give reliable results.

THE DATA PRESENTED ARE FOR CANNED FRESH PINK SALMON (ONCORHYNCHUS GORBUSHA). USING A SIMILAR SET OF DATA FROM A SAMPLE THAT WAS PREPARED FROM FROZEN PINK SALMON WHICH HAD BEEN IN STORAGE AT 0° F. FOR 6 WEEKS PRIOR TO THAWING AND CANNING, THE FOLLOWING STATISTICAL VALUES WERE COMPUTED: MEAN PENETRATION VALUE, CONTROL, 21.5 MM.; FROZEN 6 WEEKS, 12.7 MM.; STANDARD DEVIATION, CONTROL, 6.15 MM.; FROZEN 6 WEEKS, 3.49 MM.; COEFFICIENT OF VARIATION, CONTROL, 28.6 PERCENT; FROZEN 6 WEEKS, 27.3 PERCENT. FIDUCIAL LIMITS USING 1 PERCENT PROBABILITY, CONTROL, 23.9 - 19.1; FROZEN 6 WEEKS, 14.1 - 11.4. COMPARISON OF THE TWO SETS OF DATA GAVE A "t" VALUE OF 8.57 WITH THE DEGREES OF FREEDOM EQUAL TO 47, INDICATING A HIGHLY SIGNIFICANT DIFFERENCE BETWEEN THE TWO SAMPLES.



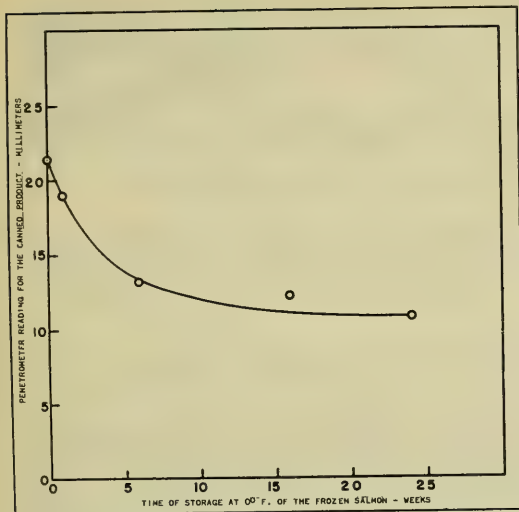


FIG. 3 - EFFECT OF STORAGE OF FROZEN PINK SALMON ON THE TEXTURE (PENETROMETER READING) OF THE SUBSEQUENTLY CANNED PRODUCT.

Figure 3 illustrates the current application of the instrument described in this note. It is a curve showing texture change (by penetration depth) versus length of time that frozen pink salmon were kept in storage at 0° F. prior to thawing and canning. The depth of penetration is inversely proportionate to the firmness of the fish. Organoleptic observations of samples similar to those reported in the graph, indicated that a dry firm texture of the canned salmon was related to the length of storage period of the frozen salmon prior to canning. The graph, prepared from the penetrometer readings made on 4 lots of canned pink salmon, confirms this relationship. Further work is planned in which the instrument will be used for objective comparisons of the texture of canned salmon frozen for much shorter intervals prior to thawing and canning.

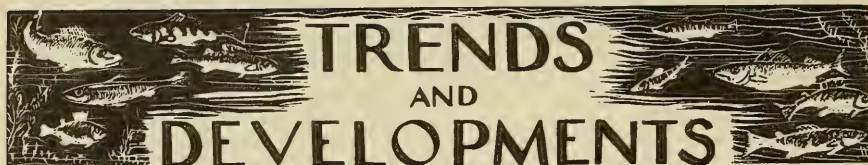
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(The Ketchikan Fishery Products Laboratory is operated jointly by the U. S. Fish and Wildlife Service and the Alaska Fisheries Experimental Commission.)





# TRENDS AND DEVELOPMENTS

## Additions to the Fleet of U. S. Fishing Vessels

A total of 43 vessels of 5 net tons and over received their first documents as fishing craft during October 1951--2 less than in October 1950. The east coast of Florida led with 9 vessels, followed by California with 8 vessels, and the west coast of Florida with 4 vessels, the Treasury Department's Bureau of Customs reported.

During the first ten months of 1951, a total of 695 vessels were documented for the first time as fishing vessels, compared with 716 vessels for the same period during 1950.

Vessels Obtaining Their First Documents as Fishing Craft, October 1951					
Section	October		Ten mos. ending with Oct.		Total
	1951	1950	1951	1950	1950
	Number	Number	Number	Number	Number
New England.....	1	7	31	35	36
Middle Atlantic.....	2	3	30	42	45
Chesapeake Bay.....	2	7	24	70	81
South Atlantic.....	12	9	100	126	153
Gulf.....	11	8	154	143	167
Pacific.....	9	6	267	206	231
Great Lakes.....	5	1	21	11	12
Alaska.....	1	4	65	80	83
Hawaii.....	-	-	3	3	4
Total.....	43	45	695	716	812

NOTE: VESSELS HAVE BEEN ASSIGNED TO THE VARIOUS SECTIONS ON THE BASIS OF THEIR HOME PORT.

## California Turns Down Request for Reduction of Anchovies and Herring

A request of more than a dozen California sardine processors to reduce anchovies, herring, or sauries into commercial oils and meals was turned down by California State Fish and Game Commissioners at their December meeting in Fort Bragg, according to a December 12 news release.

Processors asked that 20 percent of their present sardine reduction allotment be used for other species. Twenty percent of the standard 1951-52 sardine reduction quota would amount to 309 tons for each of the more than 100 holders of permits.

The Commission acted after hearing a strongly-worded statement from the Department of Fish and Game which warned that the population of anchovies in California waters is not large enough to support the proposed reduction industry in addition to the present bait and canning industries.



"Anchovies are one of the most important foods for such valuable fish as salmon, albacore, mackerel, barracuda, yellowtail, kelp bass, halibut, and other species," it was asserted. "The effect of a large-scale reduction operation might well spell disaster to the fishery."

The Bureau of Marine Fisheries stated that herring serve as food for salmon, rockfish, and other commercial and game species. Their importance increased with the scarcity of sardines. Small quantities have been canned in recent years, and this type of utilization should be encouraged, according to the Bureau, while the outright reduction of herring should not.

No fishery has developed for the saury, it was claimed, and it is doubtful if they could be caught in worthwhile quantities with gear now used.



### California Sardine Industry Regulation Urged

"Remedial legislation designed to control the entire sardine industry must be adopted in the immediate future," said the Chief of the California Bureau of Marine Fisheries at a recent meeting called by the State's Fish and Game Commission. "To manage any fishery," he asserted, "it is desirable for the management agency to have reasonably broad regulatory powers in order that the annual take may be adjusted to the productivity of the resource. Under the system it is possible to amend regulations to meet changing conditions, which often change so rapidly as to be emergencies."

A Department of Fish and Game plan to rehabilitate the California sardine fishery was greeted with mixed reactions by more than 100 industry and sportsmen representatives attending the meeting, points out a December 19 news release from that Department.

The proposed management plan recommends that power to set sardine and mackerel seasons and bag limits be given to the Commission, with aid from a seven-man advisory committee appointed by the Governor. A minimum seasonal take of 100,000 tons of sardines and 5,000 tons of Pacific mackerel was suggested.

The scarce sardine, once the mainstay of the State's commercial fishing industry, was the subject of a day-long discussion in Monterey's City Hall. The only points upon which all participants agreed were that the sardine is no longer plentiful in coastal waters, and that additional research is necessary.

Because members of various sardine industry factions could not agree on a general plan, the Director of the Department called for the creation of a 21-man steering committee. It will represent fishermen, boat owners, cannery workers, processors, reductionists, sportsmen, the Department, and the public. The initial meeting to recommend suitable action is to be held soon.

Under legislative practice, the only regulatory power in the hands of the Fish and Game Commission is that of setting regulations governing reduction of sardines into commercial oils and meals. All other sardine fishing and processing laws are made by the State Legislature.



## California Establishes Regulations for New Shrimp Industry

Regulations governing California's newest industry--ocean shrimp (prawn) fishing--have been adopted by the Fish and Game Commission.

At their December meeting, the Commissioners took action under a recent Legislative Act which will allow shrimp and prawn fishing for the first time in ocean waters off California. Unless results of the experiment are successful, fishing permits will expire in September 1953, according to a December 19 news release from the State Department of Fish and Game.

Recent exploratory cruises made by the N. B. Scofield, research vessel operated by the State Department of Fish and Game, showed commercial quantities of shrimp (prawns) in three general areas off the California coast. Area "A" under the new regulations will extend from the Oregon border to a point off False Cape, near Fortuna. Area "B" runs south to Pigeon Point, near the San Mateo-Santa Cruz county line. Area "C" extends from Pigeon Point to Rincon Point, Santa Barbara.

In offering the proposed regulations to the Commission, the Chief of the Bureau of Marine Fisheries stated that there was much unexplored area along the coast where shrimp (prawns) might be found. "It is hoped that commercial exploitation will bring additional knowledge and information concerning the extent and magnitude of this resource," he added.

The State research vessel caught as much as 450 pounds of shrimp (prawns) in 15 minutes by the use of a 10-foot beam trawl net. Experiments were made to determine which type of gear would not harm the so-called "bottom fishery" for sole, halibut, flounder, and other fishes.

As a result of the findings made aboard the N. B. Scofield, the Commission's new regulations call for use of a beam-trawl net with a mouth less than 45 feet in circumference, and a mesh 1 and 1/8 inches or smaller. Seasons for each area will open April 1 and close September 30, unless a maximum bag limit has been reached, when the season may be closed earlier. Limits are 1,500,000 pounds for Area A, 750,000 pounds for Area B, and 250,000 pounds for Area C.



## Federal Purchases of Fishery Products

FRESH AND FROZEN FISH PURCHASES BY THE DEPARTMENT OF THE ARMY, NOVEMBER 1951: For the military feeding of the U. S. Army, Navy, Marine Corps, and Air

Purchases of Fresh and Frozen Fishery Products by Department of the Army (November and the First Eleven Months, 1950 and 1951)							
Q U A N T I T Y				V A L U E			
November		Jan.-November		November		Jan.-November	
1951	1950	1951	1950	1951	1950	1951	1950
lbs.	lbs.	lbs.	lbs.	\$	\$	\$	\$
1,772,725	2,112,669	29,618,339	16,516,351	971,490	872,885	12,610,571	6,820,841

Force the Army Quartermaster Corps during November 1951 purchased 1,772,725 pounds of fresh and frozen fishery products (see table). Due to the fact that more meat was available, purchases of fishery products dropped 45.4 percent in quantity and 37.1 percent in value as compared with October 1951. Although

these purchases were 16.1 percent below November 1950, the value was 11.1 percent greater indicating that higher priced items were bought during November 1951.

For the first 11 months of 1951, purchases were greater by 79.3 percent in quantity and 84.9 percent in value as compared with the corresponding period of 1950.



### Gulf Exploratory Fishery Program

SHRIMP EXPLORATIONS IN NEW AREAS CONTINUED BY "OREGON" (Cruise No. 12): To continue exploratory shrimp fishing in previously unworked areas in the northwest Gulf and to try out experimental gear in red-shrimp grounds, the vessel Oregon left Pascagoula on November 21 on Cruise No. 12. This vessel of the Service's Branch of Commercial Fisheries is conducting fishery exploratory work in the Gulf. The vessel returned on November 21.

Throughout the trip trawling operations were hampered by bad weather. One trawl was lost and 4 others damaged in rough seas. The Oregon tied up in Galveston from November 13 to November 18 waiting for suitable trawling weather.



DUMPING A MIXED CATCH OF SHRIMP AND FISH CAUGHT BY THE OREGON IN A NIGHT DRAG. SOME SPECIES OF SHRIMP ARE CAUGHT ONLY AT NIGHT.



A series of trawling stations were made in 10, 15, 30, and 50 fathoms. Except for good catches off Southwest Pass in 40 fathoms, brown-grooved shrimp were found to be sparsely scattered from 15 to 50 fathoms. When working in the 10- to 15-fathom range, good catches of white shrimp were made off the central Louisiana coast at night. Three 200- to 220-fathom drags were made SSW. of Galveston. All produced very small quantities of red shrimp.

On November 11 a single blackfin tuna was taken trolling southeast of Ship Shoal light in 173 fathoms. No schools of tuna were observed throughout the entire trip.



### Maine Sardine Pack for 1951 Below Average

The Maine sardine canning season, which opened on April 15, closed on December 1 as per State law, according to a news release from the Maine Development Commission. The total pack of Maine sardines this year totaled 1,500,000 cases as compared with 3,800,000 cases in 1950 and a 20-year average of 2,500,000 cases (100  $3\frac{1}{2}$ -ounce cans to a case). Maine sardines were packed in soybean, peanut, and olive oils; and in mustard sauce. Quite a few  $3/4$ -pound mustards were produced.

The season looked like an economic disaster for canners, fishermen, and factory workers alike until early September. Fish had never been so scarce and Maine's 47 plants were idle most of the time. The shortest pack since the record bust of 527,000 cases in the depression year of 1932 was predicted. However, catches picked up in September and continued through October and November. The industry's productive machinery swung into action but could not get enough fish to make up for lost time. It was a short pack and bad news for the canners, who need volume to keep in the black, but disaster was averted.

Fishermen, canners, and biologists appear to be in agreement that the scarcity of fish is only temporary and was caused by a poor spawning season two years ago. They look for the schools to be back as large and plentiful as ever next season.

The canners paid approximately \$375,000 to the State Tax Assessor to finance an industry-development program. Payments were based on a tax of 25¢ a case imposed by the last Maine legislature at the request of the industry. A 17-week nationwide advertising campaign was launched in July but discontinued in late September due to the short pack and uncertain conditions.



### Metal Cans--Shipments for Fish and Sea Food, January-September 1951

Total shipments of metal cans for fish and sea food for January-September 1951 amounted to 78,955 short tons of steel (based on the amount of steel consumed in the manufacture of cans), which was considerably below 99,342 short tons of steel during the corresponding period in 1950. A decline in West Coast sardine and tuna canning and Maine sardine canning were largely responsible for this drop in shipments of metal cans.

During September this year, cans totaling 10,051 short tons of steel were shipped for use in canning fish and sea food as compared with 15,390 short tons in September 1950.

NOTE: DATA CONVERTED TO SHORT TONS OF STEEL ARE ON THE BASIS OF 23.0 BASE BOXES OF STEEL PER SHORT TON OF STEEL.



## Nylon Netting Effectiveness Tested

Inclined to discount the marked superiority claims made for nylon commercial fish netting is the Michigan Conservation Department's Fisheries Research Institute at Ann Arbor, according to a November news release from that agency.

Limited tests on inland lakes, however, indicate that the more costly nylon material has superior thread strength, rot immunity, and handling ease in comparison with other net types. Although experiments were carefully handled, the Institute points out that Great Lakes conditions might introduce elements not present in inland lakes.

Of the 1,841 fish collected, 995 were lured into nylon nets and 846 into linen ones.

Rock bass and sunfish were trapped in the nylon nets the most. Yellow perch and large-mouthed black bass more frequently were found in the linen nets.



## Wholesale and Retail Prices

WHOLESALE PRICES, NOVEMBER 1951: Bad weather along the East Coast and in the Great Lakes area and scarcity of fish on the West Coast curtailed fisheries production during November 1951. Consequently, during the month edible fishery products prices were substantially higher (4.5 percent) than during the previous month and 1.8 percent above November 1950. The edible fish and shellfish (fresh, frozen, and canned) wholesale index for November was 111.2 percent of the 1947 average (see table). In spite of Thanksgiving, demand was reported good.

Haddock and other groundfish landings in November 1951 were particularly light and prices for fresh drawn large offshore haddock jumped 25.8 percent above October and were 13.4 percent higher than in November 1950. Frozen western halibut and frozen salmon also sold at higher prices, but these products were still priced below November 1950 quotations--16.7 percent and 0.7 percent, respectively. Due to particularly light production in the Great Lakes area, fresh-water fish prices in November 1951 were considerably higher than in November 1950. From October to November 1951, prices dropped for most fresh-water species, except lake trout at Chicago which registered a considerable increase. Drawn, dressed, or whole fin-fish prices in November were 1.8 percent above the corresponding month a year earlier and 9.3 percent above October 1951.

Processed fresh fish and shellfish prices in November were 3.4 percent higher than in the previous month and 12.7 percent above November 1950. Because of lighter production and a shortage of frozen haddock fillets, fresh haddock fillet prices climbed 9.7 percent from October to November 1951, and were 54.5 percent higher than in November 1950. Fresh headless shrimp in No-

Table 1 - Wholesale Average Prices and Indexes of Fish and Shellfish, November 1951, with Comparative Data										
GROUP, SUBGROUP, AND ITEM SPECIFICATION			POINT OF PRICING/UNIT		AVERAGE PRICES (\$)			INDEXES (1947 = 100)		
					Nov. 1951	Oct. 1951	Nov. 1950	Nov. 1951	Oct. 1951	Nov. 1950
ALL FISH AND SHELLFISH (Fresh, Frozen, and Canned)								111.2	106.4	109.2
Fresh and Frozen Fishery Products:								112.7	106.2	106.9
Drawn, Dressed, or Whole Finfish:								126.9	116.1	124.7
Haddock, large, offshore, drawn, fresh			Boston	lb.	.14	.11	.12	145.3	115.5	128.1
Halibut, Western, 20/30 lbs., dressed, fresh or frozen			New York City	"	.33	.33	.40	96.6	94.8	116.0
Salmon, king, lge. & med., dressed, fresh or frozen			"	"	"	.54	.53	.55	132.9	130.1
Whitefish, mostly Lake Superior, drawn (dressed), fresh			Chicago	"	.51	.64	.52	145.9	184.9	149.6
Whitefish, mostly Lake Erie pound net, round, fresh			New York City	"	.55	.66	.53	123.5	149.2	120.7
Lake trout, domestic, mostly No. 1, drawn (dressed), fresh			Chicago	"	.57	.51	.48	125.2	111.4	104.3
Yellow pike, mostly Michigan (Lakes Michigan & Huron), round, fresh			New York City	"	.49	.49	.41	115.0	115.2	95.1
Processed, Fresh (Fish and Shellfish):								97.0	93.8	86.1
Fillets, haddock, small, skins on, 20-lb. tins			Boston	lb.	.39	.36	.25	140.1	127.7	90.7
Shrimp, lge. (26-30 count), headless, fresh or frozen			New York City	"	.50	.49	.51	72.0	71.1	73.6
Oysters, shucked, standards			Norfolk area	gal.	5.19	5.00	4.31	127.7	123.1	106.2
Processed, Frozen (Fish and Shellfish):								102.6	102.6	97.0
Fillets: Flounder (yellowtail), skinless, 10-lb. bxs.			Boston	lb.	.42	.42	.35	135.6	135.6	113.0
Haddock, small, 10-lb. cello-pack			"	"	.29	.26	.23	130.1	118.1	104.1
Ocean perch (rockfish), 10-lb. cello-pack			Gloucester	"	.26	.26	.26	130.0	128.5	130.0
Shrimp, lge. (26-30 count), 5-lb. bxs.			Chicago	"	.50	.53	.52	72.3	77.2	74.9
Canned Fishery Products:								109.0	105.8	112.5
Salmon, pink, No. 1 tall (16 oz.), 48 cans per case			Seattle	case	20.68	20.68	23.64	134.9	134.9	154.1
Tuna, light meat, solid pack, No. 3 tuna (7 oz.), 48 cans per case			Los Angeles	"	13.00	12.75	14.75	84.6	82.9	96.0
Sardines (pilchards), California, tomato pack, No. 1 oval (15 oz.), 48 cans per case			"	"	7.20	6.75	6.25	80.5	75.5	69.9
Sardines, Maine, kippers oil, No. 3 drawn (32 oz.), 100 cans per case			New York City	"	10.70	9.83	5.25	104.9	96.4	51.5

vember was quoted 1.3 percent higher, but still sold 2.2 percent below the corresponding month in 1950. Shucked oyster prices also increased 3.7 percent and were 20.2 percent higher than in November 1950. Demand for oysters has been particularly good this season.

From October to November, frozen headless shrimp prices continued to fall (6.3 percent), but this decline was offset by higher prices for frozen haddock fillets (10.2 percent) and frozen ocean perch fillets (1.2 percent). Flounder fillets remained unchanged at September prices. Compared with November 1950, frozen headless shrimp sold 3.5 percent lower, but frozen haddock fillets were priced 25 percent higher and frozen flounder fillets 20.0 percent higher. The index for processed frozen fish and shellfish for November 1951 was at the same level as in October, but 5.8 percent above November 1950.

The canned fishery products subgroup index continued to rise and in November 1951 was at 109.0 percent of the 1947 average--2.1 percent above October 1951, but 3.1 percent below November 1950. From October to November 1951, prices climbed 8.8 percent for canned Maine sardines, 6.6 percent for California sardines, and 2.1 percent for canned tuna, while canned pink salmon prices remained unchanged at September levels. Compared with November 1950, the month's prices were higher by 103.7 percent for Maine sardines and 15.2 percent for California sardines, but lower by 11.9 percent for tuna and 12.5 percent for pink salmon. The United States and Alaska pack of canned fish for the year 1951 was estimated at 790 million pounds as compared with 965 million pounds in 1950, due mainly to smaller packs of tuna, mackerel, and Maine and California sardines.



RETAIL PRICES, NOVEMBER 1951: Higher prices for all foods were paid by urban families of moderate incomes between mid-October and mid-November, according to the Bureau of Labor Statistics, U. S. Department of Labor. During the period, the retail price index for all foods rose 1.0 percent and it was 6.1 percent above mid-November 1950 (see table).

Table 2 - Adjusted Retail Price Indexes for Foods and Fishery Products, November 15, 1951, with Comparative Data				
Item	Base	I N D E X E S		
		Nov. 15, 1951	Oct. 15, 1951	Nov. 15, 1950
All foods .....	1935-39 = 100	231.4	229.2	210.8
All fish and shellfish (fresh, frozen, and canned).	do	351.1	353.2	336.6
Fresh and frozen fish .....	1938-39 = 100	295.8	294.7	278.5
Canned salmon: pink .....	do	477.4	489.1	473.1

Contrary to the increased retail prices paid for all foods, fishery products prices at retail declined between October 15 and November 15, 1951, due mainly to lower prices for canned pink salmon. The adjusted retail price index for all fresh, frozen, and canned fish and shellfish went down to 351.1 percent (a 0.6 percent drop), but was still 4.3 percent higher than on November 15, 1950.

Following the pattern of the wholesale fish index, the retail fresh and frozen fish index climbed 0.4 percent between mid-October and mid-November to 295.8 percent of the 1938-39 average and this index was still 6.2 percent above the same period a year earlier.

Retail prices for canned pink salmon continued to decline. After reaching a peak for the year on May 15, 1951, these prices between May 15 and June 15 dropped and have continued their downward trend since then. The index for canned pink salmon on November 15, 1951, was 2.4 percent below the previous month, but 0.9 percent above mid-November 1950.





## Belgian Congo

**GOOD MARKET FOR CANNED FISH:** Canned fish consumption in the Belgian Congo is increasing rapidly, and the colonial administration is making plans to raise the domestic production of this commodity over a long period. Although the Benelux countries are shipping more canned herring to this country, there should be a good market for United States canned "sardines" and herring in the Belgian Congo, provided the latter products are competitive. Price is an important factor.

The popular can size in this market is the 12-ounce oval, and a label with eye appeal will no doubt stimulate the sale of sardines and herring in this market. There are no tariff, exchange, or treaty barriers to the importation of canned fish in the Belgian Congo or Ruanda-Urundi.

Canada obtained 40 percent of the market for canned sardines in 1950 and 41 percent in the first four months of 1951. Canadian exports to this market during the first quarter of 1951 were larger than in the corresponding period a year earlier, though shipments from the United States climbed even more rapidly, according to the November 24 Canadian Foreign Trade. Total Belgian Congo imports from all countries in 1949 amounted to 652 metric tons; in 1950 to 1,325 metric tons; and during the first four months of 1951 to 772 metric tons.

Low-priced canned herrings from the Netherlands have been appearing on this market on a large scale during the last year, and are being offered in cases of four dozen 15-ounce cans at the equivalent of about \$7.50 (U.S.) c.i.f. Matadi, or at even slightly less, including a three percent commission.



## Canada

**MARINE OIL PRODUCTION IN 1951 TOPS 1950:** Marine oil production (for industrial and edible use) in Canada (including Newfoundland) in 1951 was expected to be above the high level of 1950, according to a recent report from the American Embassy at Ottawa. An increase in the output of whale and seal oil would more than offset the reduced production of other marine oils, particularly cod.

**Herring Oil:** Output in 1951 of herring oil—the principal marine oil in Canada, and produced almost entirely, in British Columbia—probably was about the same as in 1950 when 3,312,865 Imperial gallons were produced.

**Cod-Liver Oil:** Production of cod-liver oil in 1951 was expected to be down 20 percent from 1950 because of the smaller cod catch. Production in 1950 totaled 572,000 gallons of refined cod-liver oil and 563,000 gallons of sun-rotted oil.

**Other Fish Oils:** Production in 1951 of other fish oils—such as halibut, salmon, hake, and rockfish—was expected to be down from 1950. These oils were largely an incidental byproduct of the major fishing operation.

Whale Body and Sperm Oil: Production of whale body and sperm in Canada in 1951 was estimated to be about 25 percent greater than in 1950. Whale body oil output alone was estimated at 1,288,000 gallons as against 1,084,000 in 1950. Sperm oil production was estimated to be 304,000 gallons, considerably more than the 135,000 gallons produced in 1950. There was no production of pothead oil whereas 55,000 gallons were produced in 1950.

Seal Oil: The estimated output of seal oil in 1951, confined exclusively to Newfoundland, was 621,000 gallons. This represents an increase of roughly 60 percent from the production of 386,000 gallons in 1950.

Oil Exports: Canadian exports of all fish oils, except herring, in the first 9 months of 1951 were down from the corresponding period in 1950. Whale oil exports in January-September 1951 were less than half. And exports of seal oil were but 2 percent of the volume exported in the first 9 months of 1950. However, exports since September were substantial so that total exports in 1951 quite likely would exceed the volume for the year 1950. The stock position is strong, probably because processors were holding their seal oil longer than usual to take advantage of the strong market.

Marine oils have been exported chiefly to the United States, with sizable quantities of industrial herring oil going both to Germany and the Netherlands.

Imports: Canadian imports of marine oils in 1951 have been substantially greater than in 1950, with the exception of cod-liver oil. Increased imports of fish oil for fortifying purposes and those for industrial purposes, not otherwise specified, were substantial. Nearly all of the marine oils imported came from the United States. Cod-liver oil imports, however were almost entirely from Norway and the United Kingdom.

Prices: Most Canadian marine oil prices this year have been high as a result of the relatively strong market for fats and oils since the outbreak of war in Korea. Medicinal oil prices, however, have not been so strong as have other marine oil prices.

Outlook: The market outlook for Canadian marine oils is considered very favorable with the exception of vitamin oils. The latter are adversely affected by the fact that Japan has reentered the United States market with its low-potency oils and Canadian producers are unable to compete with the lower Japanese prices.



## Iceland

NEW TRAWLERS WILL NOT BE EQUIPPED WITH FISH-MEAL PLANTS: The Reykjavik Vessel Owners Association in Iceland has decided not to install fish-meal plants in the newest Diesel trawlers which will be brought from England in the near future, according to an Icelandic newspaper item reported in the November 15 Fiskets Gang, a Norwegian fishery publication. The decision stems from the very poor results obtained with three trawlers delivered earlier which had fish-meal plants on board.

Experience has demonstrated that when a trawler must fish on distant banks it is more profitable to use the space occupied by a fish-meal plant for storing either iced or salted fish.



## Indonesia

FISHING FACILITIES EXPANDED: Because of insufficient fishing boats and equipment, the Indonesian fish catch was greatly reduced during World War II, states a November 26, 1951, American Embassy dispatch from Djakarta. Efforts are now under way to alter this situation by increasing fishing facilities and equipment. The following equipment is being provided the fisheries—yarn and netting, 60 small motorized "majang" fishing boats, and 17 larger motorized bonito boats, two fish carriers, and one fishery-research vessel.



## Japan

PRODUCTION OF EIGHTH MOTHERSHIP-TYPE TUNA EXPEDITION: After 83 days of operation in the waters adjacent to the U. S. Trust Territory of the Pacific Islands, the Tenyo Maru No. 2, mothership of the eighth mothership-type tuna expedition, together with 25 catcher boats, returned to Japan. The expedition operated from August 2 to October 23, 1951, from 2°-7° N. latitude and 140°-178° E. longitude, states SCAP's Natural Resources Section Weekly Summary of October 31, 1951.

The expedition produced about 7,726,200 pounds of tuna and other species of fish as follows: 3,090,500 pounds of yellowfin tuna, 1,700,000 pounds of other tuna, 1,622,500 pounds of spearfish, 1,236,000 pounds of shark, and 77,200 pounds of other fish. The bulk of the catch will be used for domestic consumption, but approximately 10 percent of the load (yellowfin only) may be exported.

The average weight per fish was 55 pounds for yellowfin, 56 pounds for other tuna, 93 pounds for spearfish, 59 pounds for shark, and 16 pounds for other species. Many catcher days were lost delivering fish to the factory ship and loading supplies and repairing gear. Average catch per boat per day of operation was 6,107 pounds.

PRODUCTION OF NINTH MOTHERSHIP-TYPE TUNA EXPEDITION: On October 31, 1951, the Tenryu Maru, mothership of the ninth mothership-type tuna expedition returned to Japan with five catcher boats after 43 days of operation in the waters adjacent to the U. S. Trust Territory of the Pacific Islands.

The expedition was a small, short-term one and was attached to the eighth tuna expedition, headed by the Tenyo Maru No. 2, for administrative and control purposes. The expedition was required to operate within 250-300 miles of the eighth expedition. The area of operation was from 2°-6° N. latitude and from 150°-168° E. longitude.

Total catch is estimated at 376,550 pounds of tuna and other species of fish as follows: yellowfin 148,900 pounds, other tunas 87,100 pounds, spearfish 115,800 pounds, shark 9,800 pounds, and other fish 14,950 pounds. The average weight of fish of the various species is: yellowfin 68 pounds, other tunas 88 pounds, spearfish 121 pounds, shark 75 pounds, and other fish 25 pounds. Plans are to use all of the products for domestic consumption. Approximately 100,000 pounds was returned in frozen condition, and the remainder was iced.

\* \* \* \* \*

JAPANESE DISPLAY INTEREST IN NORTH PACIFIC FISHERIES NEGOTIATIONS: The Japanese Government and industry showed great interest in the Canada-Japan-United States

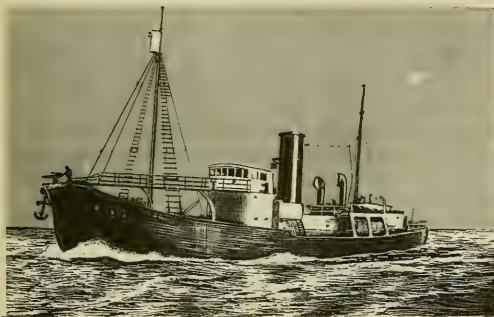
fisheries negotiations which started on November 5, states a November 23 American consular dispatch from Tokyo. These negotiations are directed toward a tripartite North Pacific Fisheries Convention.

Japan put great emphasis upon the precedent this would set for similar agreements with Asian nations, such as Indonesia. The press and other circles opposed extensive restrictions on Japan's fisheries activities, such as the establishment of "preserved" fishing grounds or restricted fishing periods, and stress was laid on the principle of freedom of fishing in the open seas. At the same time the need to effect conservation in high-seas fisheries was acknowledged.

\* \* \* \* \*

FIRST SPERM WHALING EXPEDITION LEAVES FOR ANTARCTIC: The Baikal Maru, mother-ship of the Japanese sperm whaling expedition, accompanied by five catcher boats departed Osaka on October 15, 1951, for the Antarctic, SCAP's Natural Resources Section Weekly Summary of October 20, 1951, points out. The vessel is of 6,000

gross metric tons. The fleet will operate for approximately 70 days, and the company owning the fleet hopes that the catch will amount to as much as 400 sperm whales. The license issued by the Fisheries Agency, Japanese Ministry of Agriculture and Forestry, permits the vessel to take only sperm whales. Two inspectors from the Fisheries Agency are on board the vessel to assure compliance with Japanese regulations and the terms of the International Whaling Convention.



A TYPICAL JAPANESE WHALE CATCHER OR KILLER BOAT (385 GROSS METRIC TONS) USED IN ANTARCTIC WHALING.

that Japan has dispatched an expedition to the Antarctic for the sole purpose of taking sperm whales. The Baikal Maru operated in the Bonin Islands in the 1949, 1950, and 1951 seasons.

This is the first time in the history of Japanese whaling

JAPANESE GOVERNMENT



Norway

CANNERIES EXPLORE TUNA PACKING: Some canneries on the Norwegian west coast have become interested in packing tuna for export, according to a statement of an official of Norsk Frossenfish quoted in the October 10 issue of Fiskaren, a Norwegian trade paper. At present the greatest proportion of the tuna taken in Norway is exported to Italy either fresh or frozen.

Experts have been brought in to discuss export possibilities and to aid in the preparation and canning of tuna. Insofar as the United States market is concerned, the official stated that either Norwegian packers must can the small tuna whose meat is lighter in color than the large ones, or Norwegian research must come forward with a method which will permit the canners to make tuna meat lighter by artificial means.

## Republic of the Philippines

AMERICAN-OWNED TUNA-FISHING COMPANY TRANSFERRING OPERATIONS TO SIAM: An American-owned fishing company was granted a permit in August 1950 by the Government for a Philippine-based tuna-fishing operation. The company has announced that in order to realize some profit on its investment, it is transferring operations to Siam.

According to reports, the company which is capitalized at \$100,000, is effecting the transfer due to its inability to fish for tuna in Philippine waters because of Government requirements, high taxes, and difficulties and delays in securing permits. Besides a tax of \$25,000 on fishing vessels, taxes of 7 percent on sales and \$1.00 per ton on the catch were being levied by the Government. In addition, a larger crew was required for the operation of the vessel than in the United States. The company was trying to obtain an exemption from taxation, but this was denied by the Government on the grounds that it was not a new industry, a November 21 American consular dispatch from Manila points out.



## Trinidad

SMOKED HERRING PLANT PLANNED: The establishment of a small plant for salting and smoking fresh herring as a means of supplementing supplies for local consumption is planned by the Government of Trinidad and Tobago. Tests will be made to ascertain the best method of preparing the herring, following which a smokery will be set up, according to the December 8 issue of Canadian Foreign Trade.

Approximately \$17,500 will be provided from Government funds to meet costs of machinery and production, including the purchase of fish for six months. It is also proposed to apply for a grant of \$2,400 from the Development and Welfare Organization to assist the development. The smokery will be operated at first during six months of the herring season and, if the venture is successful, it is hoped that a local firm will take it over and develop it as a commercial enterprise.



## Uruguay

LARGE-SCALE FISHING ENTERPRISE PLANNED OFF SOUTH AMERICAN EAST COAST: A large-scale mothership-type fishing operation is planned along the East Coast of South America, according to the September 1951 World Fish Trade, a Swedish periodical. A well-known captain and shipowner, who previously has managed important enterprises in Europe, now directs this enterprise and company from his offices in Montevideo, Uruguay.

The concern plans to carry out a large-scale fishing operation along the East Coast of South America outside territorial limits. The catches will be delivered to one or more motherships which then will clean, fillet, and freeze the fish, and process the trash fish and waste into byproducts. With its own transport vessels, the firm plans to ship the products to different markets, especially fish fillets to the United States and fish meal to certain European countries.



The necessary fishing cutters will most probably be bought from Denmark. Also, a mothership and a transport vessel were to be built in Denmark, but it is believed that the orders for building these vessels will finally be placed in Germany.

The preparatory work to start this fishing enterprise is expected to last about one year.



### United Kingdom

JUDGMENT IN ANGLO-NORWEGIAN TERRITORIAL WATERS FISHERIES CASE: The method employed for the delimitation of the fisheries zone by the Royal Norwegian Decree of July 12, 1935, is not contrary to international law, according to a judgment (10 votes to 2) rendered by the Hague Court of International Justice in December, points out an American consular dispatch from The Hague dated December 19. By 8 votes to 4, the Court found "that the base-lines fixed by said decree in application of this method are not contrary to international law."

One of the judges concurred "in operative part of judgment" but emphasized that he did so because "he considers that the Norwegian Government has proved the existence of an historic title to the disputed areas of water." Two other judges appended separate opinions, and two judges dissented.

The case regarding the Anglo-Norwegian territorial waters dispute as it affects the fisheries was heard before the Court in September and hearings closed in October.

Briefly, the dispute hinged on the Norwegian method of determining the limits of its territorial waters. The Norwegians measured territorial limits from base lines running from extreme points of the coastline instead of a curved line extending from the mainland three miles into the sea, measured at low water. From its determined base lines, Norway has claimed a further four-mile limit as territorial waters.

The bulk of the British newspaper comment on the decision reflects great disappointment, not only because it shuts out many miles of valuable fishing grounds to British fishing fleets, but also since it appears to raise questions regarding the old convention of the three-mile limit for territorial waters, points out a December 21 American Embassy dispatch from London.





# FEDERAL ACTIONS

Department of Commerce

NATIONAL PRODUCTION AUTHORITY



MARINE MRO ORDER AMENDED: Because of the vital role that NFA Order M-70 (Marine, Maintenance, Repair, and Operating Supplies and Minor Capital Additions) plays in the operations of the commercial fishing fleet, the changes in the Order recently made by the National Production Authority, effective January 1, 1952, will be of interest to the fishery and allied industries. Pending a complete revision of the Order, NFA announced that:

- (1) The DO-R-9 rating can now be used for the purchase of minor capital additions up to \$1,000 each. Previously the ceiling was \$750.
- (2) All references to "fourth calendar quarter of 1951" throughout the Order have been changed to "first calendar quarter of 1952."

For those boat operators who wish to make capital additions to their boats in excess of the \$1,000 permissible ceiling, the prior approval of NPA must be obtained.

For details see: Amdt. 1, issued Dec. 28, 1951, to M-70 (Marine, Maintenance, Repair, and Operating Supplies and Minor Capital Additions), and Press Release NPA-1677.

\* \* \* \* \*

PRIORITY RATINGS FOR MATERIALS FOR INSTALLATION OF INDUSTRIAL EQUIPMENT:

Manufacturers and repairmen are permitted to use priority ratings for obtaining materials for installation of industrial equipment by CMP Regulation 5 as amended December 20 by NPA. In addition, other provisions of the regulation were brought up to date.

The amendment to CMP Regulation 5:

(1) Permits manufacturers to obtain materials needed for installation of equipment in existing buildings on a priority basis in the same way they are permitted to obtain minor capital additions. "Installation" is lengthily defined. A limit of two tons of carbon steel, 200 pounds of copper products, and no aluminum, stainless steel or alloy steel is established for each installation. Installation under the regulation is not construction as defined in Order M-4A.

(2) Establishes separate minimum quarterly quotas of \$1,000 each for MRO supplies, minor capital additions, and installations. Previously, the minimum for combined MRO and minor capital additions were \$1,000 a quarter.

(3) Raises from \$750 to \$1,000 the limit which a manufacturer may spend for each minor capital addition when he uses the MRO symbol to obtain materials.

(4). Expands the definition of operating supplies of a business enterprise to include expendable tools, jigs, dies, and fixtures used on production equipment, regardless of the accounting practice of the business.

For details see: CMP Reg. 5 (Maintenance, Repair, and Operating Supplies, Installation, and Minor Capital Additions Under the Controlled Materials Plan) as amended Dec. 20, 1951, and Press Release NPA-1671.

\* \* \* \* \*

SIGNATURE FOR CERTIFICATION: When a customer signs a purchase or delivery order, the signature may also serve in most cases as the signature for certification of the fact that the order complies with NPA regulations, according to an interpretation of NPA Regulation 2, issued by NPA on December 19, 1951.

For details see: Int. 2 (Signature for Certification on Purchase or Delivery Orders), issued Dec. 19, 1951, to NPA Reg. 2 (Basic Rules of the Priorities System), and Press Release NPA-1661.

\* \* \* \* \*

INVENTORY CONTROL ORDER AMENDED: Tighter inventory limitations were placed on 19 items in short supply by Amendment 1 to NPA Regulation 1 (Inventory Control) issued December 14. In the same action, controls were relaxed on five materials none of which are of interest to the fisheries.

Cellophane was one of the items added to the list of items restricted to a practical minimum working inventory.

Three types of alloy steel--nickel clad, inconel clad and monel clad--and two types of carbon steel--copper clad and aluminum clad--were placed under 45-day inventory limitations by the amendment.

Nine other types of carbon steel were removed from provisions of NPA Steel Order M-1 and placed in Table 1B of Regulation 1. However, they still are limited to a 45-day inventory as provided in M-1. Items included of interest to the fishery and allied industries are wire rope and strand; welded wire mesh and woven wire netting; and galvanized nails.

In the amendment, NPA also listed in Table II three classifications of products covered by individual inventory limitation orders, among which is included the classification "certain controlled materials in the inventory of a retailer."

For details see: Amdt. 1, issued Dec. 14, 1951, to NPA Reg. 1 (Inventory Control).

\* \* \* \* \*

CAN DISTRIBUTION BY CAN MANUFACTURERS: Direction 2 to M-25 (cans), issued by NPA on December 12 and effective on the same date, explains the manner in which a manufacturer fills orders representing his customers' can requirements for their carry-over quota or quotas. Requirements for carry-over quotas to be deferred or to be ratably filled are contained in this order. However, this direction does not permit a packer to use after December 31, 1951, any carry-over quotas attributable to any calendar quarter of 1951, or any part of any such quotas.

This Direction 2 insures the most equitable distribution of the limited quantities of metal cans needed to pack various products, and directs can manufacturers to satisfy current demands for cans first and then to fill carry-over requirements on a pro-rata basis.



Under Direction 2 to Order M-25, issued Dec. 12, a manufacturer is forbidden to fill any order representing an unused quota for a previous quarter that will delay or displace orders representing current quarter requirements. This means that can orders placed under NPA directives, DO-rated orders, and basic quarterly quotas must be scheduled ahead of orders representing carry-over requirements.

For details see: Direction 2 (Distribution of Cans by Can Manufacturers to M-25, issued Dec. 12, 1951.

\* \* \* \* \*

**CAN ORDER (M-25) CHANGED:** The standard procedure whereby users of tin cans for packaging purposes may adjust their tin-can bases for the first three quarters of 1952 themselves without the necessity of NPA determining such bases for them was continued by the issuance of Direction 3 to Order M-25. (The attention of sea-food canners is called to this direction.)

Direction 3 was issued to supersede Direction 1, as amended May 1, 1951. Direction 1, which was revoked on January 1, 1952, established a method of averaging quarterly tin-can bases.

Direction 3 is applicable to any packer who was using tin cans to pack less than the customary volume of any particular product during any of the first three quarters of his selected base calendar year. Under M-25, a packer may use either 1949 or 1950 as his base year.

The new Direction in no way increases the total amount of cans which a packer may use, but simply gives him an opportunity to spread production equally over all quarters of 1952.

A packer may not wish to use his actual quarterly bases provided for by M-25. Under Direction 3, he may use as a quarterly packing base for the first quarter that amount of cans determined by dividing the amount of cans used to pack a particular product during his base year by four. NPA explained that M-25 obligates a packer to calculate his quarterly base on the amount of tin cans which he used for a particular product during the corresponding quarter of his selected base year, either 1949 or 1950.

Direction 3 further provides that if a packer has not used this method during the first quarter and wishes to do so for the last three quarters of 1952 he may calculate his quarterly base, starting with the second quarter, by dividing the amount of cans used in the last three quarters of his base period by three.

Similarly, if he has not used this method for the first two quarters and wishes to do so for the last two quarters, he may calculate his quarterly base, starting with the third quarter, by dividing his base period third and fourth quarter can consumption by two.

**DIR. 3—DETERMINATIONS OF ADJUSTMENT FOR 1952**

This direction under NPA Order M-25 is found necessary and appropriate to promote the national defense and is issued pursuant to section 101 of the Defense Production Act of 1950, as amended. In the formulation of this direction, consultation with industry representatives has been rendered impracticable due to the need for immediate action.

Sec.

1. Effect of this direction.
2. Type of case where applicable.
3. Direction.
4. Conditions.
5. Modification or revocation of individual adjustments.

**AUTHORITY:** Sections 1 to 5 issued under sec. 704, 64 Stat. 816, Pub. Law 96, 82d Cong.; 50 U. S. C. App. Sup. 2154. Interpret or apply sec. 101, 64 Stat. 799, Pub. Law 96, 82d Cong.; 50 U. S. C. App. Sup. 2071. Sec. 101, E. O.

10161, Sept. 9, 1950, 15 F. R. 6105; 3 CFR, 1950 Supp.; sec. 2, E. O. 10200, Jan. 3, 1951, 16 F. R. 61; secs. 402, 405, E. O. 10281, Aug. 28, 1951, 16 F. R. 8789.

**SECTION 1. Effect of this direction.** This Direction 3 to NPA Order M-25 (hereinafter called "this direction") provides a standard with respect to can quotas for the first, second, and third calendar quarters of 1952 in accordance with which, if applicable to his operations, a packer may make a determination of adjustment without making an application for adjustment to NPA. References in this direction to NPA Order M-25 mean NPA Order M-25 as now or hereafter amended, and any term which is defined or used in NPA Order M-25 and used in this direction, including the term "amount of cans," shall have the same definition or meaning in this direction as in NPA Order M-25. The provisions of paragraphs (b) and (c) of section 3 of this direction

afford packers the same benefits and privileges for 1952 as are afforded by paragraphs (a) and (b), respectively, of section 3 of Direction 1 as amended May 1, 1951, to NPA Order M-25, and by the second proviso in section 7 of NPA Order M-25. This direction accordingly revokes Direction 1 to NPA Order M-25, and therefore, notwithstanding the second proviso in section 7 of NPA Order M-25, no determination of adjustment pursuant to said Direction 1 may be made by any packer on or after January 1, 1952.

**Sec. 2. Type of case where applicable.** This direction applies to those cases where a packer was packing in cans less than the customary volume of a particular product during the first, second, or third calendar quarter of his selected base calendar year.

**Sec. 3. Direction—(a) As to first quarter of 1952.** Instead of using as a first

quarter packing base the amount of cans which he used for packing a particular product during the first quarter of his selected base year as provided in section 6 (b) of NPA Order M-25, a packer may use as a first quarter packing base an amount of cans determined by dividing by 4 the amount of cans which he used for packing such product during the calendar year which he selects as his base year. Every packer relying on such determination shall continue to use the same during the succeeding quarters of the calendar year 1952, unless otherwise ordered by NPA. Such computed quarterly packing bases are subject to the applicable quota percentage limitations in each quarter.

(b) *As to second quarter of 1952.* Instead of using as a second quarter packing base the amount of cans which he used for packing a particular product during the second quarter of his selected base year as provided in section 6 (b) of NPA Order M-25, a packer may use as a second quarter packing base an amount of cans determined by dividing by 3 the amount of cans which he used for packing such product during the last 3 quarters of the calendar year which he selects as his base year. Every packer relying on such determination shall continue to use the same during the succeeding quarters of the calendar year 1952, unless otherwise ordered by NPA. Such computed quarterly packing bases are subject to the applicable quota percentage limitations in each quarter.

*Illustration.* The packer selects 1950 as his base year. During the last three calendar quarters of the year 1950 he used a

total of 18,000 base boxes for packing product X. The result of dividing by 3 is 6,000 base boxes. If product X is permitted a percentage quota of 100 percent under Schedule I of NPA Order M-25 during the second quarter of 1952, the packer using this direction may use a maximum of 100 percent of 6,000 base boxes during said quarter, and if the percentage quota is continued at 100 percent during a succeeding quarter, the packer may use a maximum of 100 percent of 6,000 base boxes during such succeeding quarter. If, however, the percentage quota is changed for a succeeding quarter to 70 percent, then the packer may use during such succeeding quarter a maximum of only 70 percent of 6,000 base boxes, or 4,200 base boxes.

(c) *As to third quarter of 1952.* Instead of using as a third quarter packing base the amount of cans which he used for packing a particular product during the third quarter of his selected base year as provided in section 6 (b) of NPA Order M-25, a packer may use as a third quarter packing base an amount of cans determined by dividing by 2 the amount of cans which he used for packing such product during the last 2 quarters of the calendar year which he selects as his base year. Every packer relying on such determination shall continue to use the same during the fourth quarter of the calendar year 1952, unless otherwise ordered by NPA. Such computed quarterly packing bases are subject to the applicable quota percentage limitations in each quarter.

**SEC. 4. Conditions.** Any determination of adjustment made pursuant to this direction is subject to the following conditions:

(a) There shall be applied against the amount of cans, as determined under section 3 of this direction, the quota percentage at any time applicable for the particular product as set out in Schedule I of NPA Order M-25.

(b) Every person relying on any such determination shall prepare a detailed written record of the facts relating to the application of the determination to his operations and preserve the same.

(c) A copy of such record shall be promptly transmitted to NPA upon its request.

(d) Such record shall be made available at the person's usual place of business for inspection and audit by duly authorized representatives of NPA.

**SEC. 5. Modification or revocation of individual adjustments.** NPA reserves the right to modify or revoke any individual adjustment made pursuant to this direction by mailing notice of such modification or revocation to any person whose adjustment is being modified or revoked. NPA may amend or revoke this direction and by so doing modify, with respect to subsequent calendar quarters of 1952, all adjustments made hereunder.

This direction shall take effect January 1, 1952.

Issued December 29, 1951.

NATIONAL PRODUCTION  
AUTHORITY,

By JOHN B. OLVERSON,  
Recording Secretary.

Also see: Direction 1 (Determination of Adjustment, Revocation), issued Jan. 1, 1952, to M-25 (Cans) and Press Releases NPA 1691, dated Jan. 3, 1952, and NPA 1676, dated Dec. 29, 1951.

NOTE: FULL TEXTS OF MATERIALS ORDERS MAY BE OBTAINED FROM NATIONAL PRODUCTION AUTHORITY, WASHINGTON 25, D. C., OR FROM ANY DEPARTMENT OF COMMERCE REGIONAL OR FIELD OFFICE.



## Economic Stabilization Agency

### OFFICE OF PRICE STABILIZATION

**CERTAIN FISH SPECIALTIES EXEMPTED FROM PRICE CONTROL:** Certain specialty food items (including fish and seafood specialties) were exempted from any ceiling price restrictions imposed by OPS.

Amendment 8 to General Overriding Regulation 7, effective December 26, 1951, states that no ceiling price regulations shall apply to sales by manufacturers, processors, wholesalers, importers and retailers of a number of domestically-produced or imported specialty food items, among which are included:

These fish and sea food items: pates; pastes; purees; clam juices; fish roe; caviar; fish and sea-food hors d'oeuvres.

The following canned soups:...fish or sea food (except clam chowder).

Sales only by importers, wholesalers, and retailers of a number of other domestically-produced or imported products in consumer-size containers are also exempted from price control. Among those listed are sauces containing fish or sea food.

Also exempted are all sales of certain imported specialty food items imported in consumer-size containers, among which are included non-sterile processed fish (except herring and salmon).

For details see: Amendment 8 (Specialty Food Items), issued Dec. 20, 1951, to GOR 7 (Exemption of Certain Food and Restaurant Commodities).

\* \* \* \* \*

SALT FLAT LAKE HERRING CEILING PRICES ESTABLISHED: Dollars-and-cents ceiling prices for salt flat lake herring processed from Lake Superior herring and packed in Minnesota, Wisconsin, and Michigan were established by OPS on December 21 at the manufacturer and processor level.

Ceiling Price Regulation 109, effective December 26, establishes a ceiling of \$16.40 for a 100-pound keg of this type of salt herring, compared with an estimated average price of \$13.80 under the General Ceiling Price Regulation.

OPS said that this price increase will be reflected primarily as higher costs to logging camp commissaries. Only a small portion of the annual pack of approximately 4,000,000 pounds is distributed through regular retail outlets.

Ceilings on the small part of the pack that enters the retail trade will be established by the percentage mark-up provisions in the wholesale and retail grocery ceiling price regulations (CPR's 14, 15, and 16).

OPS said the higher ceiling is being allowed because the cost of processing salt lake herring has risen substantially since the start of the Korean conflict. The main reason for this sharp rise has been the more extensive use of this type of herring as an animal feed which has increased the cost of raw fish to the processors.

For details see: Press Release No. Q-600, issued December 21, 1951. issued December 21, 1951.

#### CPR 109—SALT FLAT LAKE HERRING

Pursuant to the Defense Production Act of 1950, as amended (Pub. Law 774, 81st Cong., Pub. Law 96, 82d Cong.), Executive Order 10161 (15 F. R. 6105), and Economic Stabilization Agency General Order No. 2 (16 F. R. 738), this Ceiling Price Regulation 109 is hereby issued.

#### STATEMENT OF CONSIDERATIONS

This regulation establishes dollars-and-cents ceiling prices at the final processor's level for sales of salt flat lake herring.

At the present time the prices for salt flat lake herring are governed by the General Ceiling Price Regulation. This commodity is processed from Lake Superior herring and is packed in Minnesota, Wisconsin, and Michigan. The run of fish usually extends from late October through December, and by the beginning of January the packing opera-

tion is completed. The total yearly catch of Lake Superior herring is about 20 million pounds, approximately one-third of which is salt processed. In this operation fresh herring is first headed and gutted. It is then "slimed" (the first salting operation), salted, packed, brined, stored and repacked. The "sliming" may be done either by the fishermen or by the packer. In weight, the finished product is about two-thirds the weight of fresh uncleaned herring. The processed end product is sold to distributors in 100 lb. kegs, 50 lb. kegs, 25 lb. kegs, 10 lb. kegs, 8 lb. kegs, 6 lb. kegs, and 3 lb. glass jars packed in cases of four.

The cost of processing salt flat lake herring has risen substantially since the beginning of the Korean conflict, the largest part of this increase occurring in the price of raw fish. The main reason for this sharp rise in the price of raw herring is its more extensive use as animal feed due to the rise in the price of

horse meat, for which it can be substituted. Because of the extent of the cost increases, processors could not be compelled to absorb the increased costs without suffering severe financial hardship. Accordingly, it is necessary to revise the processors' ceiling prices.

The packing season is now well under way and the marketing season is about to begin. Immediate ceiling price adjustment is necessary if the processors are to be permitted an opportunity to sell the herring at a fair and equitable price. The only data readily available concerning the salt flat lake herring industry relate to costs and prices in 1950 and 1951. Pending further study of the industry, the Director of Price Stabilization has determined that it will be equitable, as an interim measure, to establish ceiling prices for salt flat lake herring on the basis of 1950 prices and costs for this commodity, adjusted to reflect increased direct material and



direct labor costs. On this basis, a price of \$16.40 is established for a 100 lb. keg, f. o. b. packer's plant. In addition, the regulation establishes dollars-and-cents ceiling prices for container sizes and types and styles distinguished for pricing purposes in the industry. Differentials of container sizes and types and styles which follow industry distinctions have been recognized. The prices specified are gross prices and customary allowances and discounts must be deducted from them. These increased prices will be reflected at the wholesale and retail level by the percentage markups provided for in Ceiling Price Regulations 14, 15 and 16.

It should be emphasized that this regulation is necessarily an interim measure. The ceiling prices established by this regulation may be revised upward or downward, to reflect the results of a study of the industry data and any changes in unit costs from present levels.

#### FINDINGS OF THE DIRECTOR

In formulating this regulation the Director of Price Stabilization has consulted with industry representatives to the extent practicable and has given full consideration to their recommendations. In his judgment, the provisions of this regulation are generally fair and equitable and are necessary to effectuate the purposes of Title IV of the Defense Production Act of 1950, as amended. The ceiling prices established by this regulation are higher than the prices prevailing just before the date of issuance of this regulation.

As far as practicable, the Director of Price Stabilization gave due consideration to the national effort to achieve maximum production in furtherance of the Defense Production Act of 1950, as amended; to prices prevailing during the period from May 24, 1950 to June 24, 1950, inclusive; and to the relevant factors of general applicability.

#### REGULATORY PROVISIONS

##### Sec.

1. What this regulation does.
2. Where this regulation applies.
3. Ceiling prices for standard packs of salt flat lake herring.
4. Ceiling prices for other packs of salt flat lake herring.
5. How you may sell on a delivered basis.
6. Conditions and terms of sale.
7. Petitions for amendments.
8. Records.
9. Prohibitions.
10. Evasions.
11. Definitions.

**AUTHORITY:** Sections 1 to 11 issued under sec. 704, 64 Stat. 816, as amended, 50 U. S. C. App. Stat. 2154. Interpret or apply Title IV, 64 Stat. 803, as amended; 50 U. S. C. App. Stat. 2101-2110. E. O. 10161, Sept. 9, 1950, 15 F. R. 6105; 3 CFR, 1950 Supp.

**SECTION 1. What this regulation does.** This regulation sets dollars-and-cents ceiling prices for sales of salt flat lake herring (see section 11, *Definitions*) by the processor. These ceiling prices supersede those established by the General Ceiling Price Regulation (GCPR).

**SEC. 2. Where this regulation applies.** The provisions of this regulation apply

in the 48 states of the United States and the District of Columbia.

**SEC. 3. Ceiling prices for standard packs of salt flat lake herring.** Your ceiling prices for the specified packs of salt flat lake herring are those listed below. The prices are for the indicated container sizes and types and styles, f. o. b. vehicle at that vehicle's loading point nearest your packing plant.

Container size and type	Style	Ceiling price
100 pound keg.....	Whole.....	\$16.40
50 pound keg.....	Whole.....	8.30
25 pound keg.....	Whole.....	4.65
10 pound keg.....	Whole.....	2.40
5 pound keg.....	Whole.....	2.05
3 pound glass.....	Whole.....	1.65
3 pound glass.....	Fillets.....	1.60

<sup>1</sup> Per case of 4 containers.

**SEC. 4. Ceiling prices for other packs of salt flat lake herring.** For container sizes, or types and styles of salt flat lake herring not listed in section 3, you shall apply to the Director of Price Stabilization for the approval of a ceiling price in line with the prices established by this regulation. Your written request should be sent by registered mail to the Fish Branch, Office of Price Stabilization, Washington 25, D. C., and must show (a) the size and type of container for both the product listed in section 3 to which your unlisted product is most similar and for that latter product, and (b) your proposed ceiling price, and (c) your respective selling prices of the two products as of June 24, 1950, or the latest date previous to June 24, 1950, on which both products were sold or offered for sale by you. Your proposed ceiling price must be in line with the prices established by this regulation, after making appropriate allowance for differences between the herring for which you propose a ceiling price and the most similar product listed in section 3. Fifteen days after the OPS has received your application, as shown by your return postal receipt, you may sell the commodity at the ceiling price you proposed unless OPS has notified you not to do so or has requested further information. If, within the fifteen-day period OPS has asked you for more information, you may not sell the commodity at the proposed ceiling price until fifteen days after OPS has received the requested information. You must mail the information requested by registered mail, return receipt requested. The Director of Price Stabilization may at any time disapprove or revise downward ceiling prices proposed to be used or being used under this section so as to bring them into line with the level of ceiling prices otherwise established under this regulation.

**SEC. 5. How you may sell on a delivered basis.** If you wish to sell on a delivered basis, you may do so, but your delivered price for salt flat lake herring may not be more than your f. o. b. ceiling prices established by this regulation plus the charge at the lowest available rate for the transportation of an identi-

cal quantity packed in the same size and type container, from your packing plant to the buyer's designated receiving point. In no case may you add to your ceiling price an amount greater than the exact charge in dollars-and-cents actually paid for the transportation of the salt flat lake herring being shipped at the lowest available freight rate for the same type and size of container from your packing plant to the buyer's designated receiving point.

**SEC. 6. Conditions and terms of sale.** The ceiling prices set forth in this regulation are gross prices and you must continue to apply all customary delivery terms, discounts, allowances, guarantees, and other usual and customary terms and conditions of sale which you had in effect between December 19, 1950 and January 25, 1951, inclusive, except that in no instance shall the gross selling price of any item covered by this regulation exceed the ceiling price for such items.

**SEC. 7. Petitions for amendments.** If you wish to have this regulation amended you may file a petition for amendment in accordance with the provisions of Price Procedural Regulation 1, Revised (16 F. R. 4974).

**SEC. 8. Records.** Every processor of salt flat lake herring who sells or exchanges salt flat lake herring in the regular course of trade or business or otherwise deals therein shall make and keep for inspection by the Director of Price Stabilization for a period of 2 years accurate records of each sale made after the effective date of this regulation. The records must show the date of the sale or exchange, name and address of the purchaser, and the price charged or paid, itemized by quantity, type and size of container, and style. The records must indicate whether each purchase or sale is made on an f. o. b. or on a delivered basis, and in the latter case the shipping and transportation charges, unless delivery is by common carrier. Records must show all discounts, allowances and other terms and conditions of sale.

**SEC. 9. Prohibitions.** You shall not do any act prohibited or omit to do any act required by this regulation, nor shall you offer, solicit, attempt, or agree to do or omit to do any such acts. Specifically (but not in limitation of the above) you shall not, regardless of any contract or other obligation, sell, and no person in the regular course of trade or business shall buy from you at a price higher than the ceiling prices established by this regulation, and you shall keep, make and preserve true and accurate records required by this regulation. If you violate any provisions of this regulation, you are subject to criminal penalties, enforcement action, and action for damages.

**SEC. 10. Evasions.** (a) Any means or device which results in obtaining indirectly a higher price than is permitted by this regulation or in concealing or falsely representing information as to which this regulation requires records to be kept is a violation of this regulation.

This prohibition includes, but is not limited to, means or devices making use of commissions, services, cross sales, transportation arrangements, premiums, discounts, special privileges, upgrading, tie-in agreements and trade understandings, as well as the omission from records of true data and the inclusion in records of false data.

Sec. 11. *Definitions.* For the purpose of this regulation the following terms

will have the indicated meaning:

(a) "Processor" means a person who may "slime" and who salts, packs, brines, stores and repacks fresh Lake Superior herring.

(b) "Salt flat lake herring" is the end product of fresh Lake Superior herring which has been split, eviscerated and packed after undergoing a processing of two separate salting and brining stages according to the customary processing technique in the trade.

*Effective date.* This regulation is effective December 26, 1951.

*NOTE.* The record keeping and reporting requirements of this regulation have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

MICHAEL V. DiSALLE,  
Director of Price Stabilization.

DECEMBER 21, 1951.

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CPR 22 PROHIBITIONS CHANGED: The 15-day waiting period provided in CPR 22 with respect to commodities reported on an OPS Public Form No. 8 was eliminated by Amendment 35 to this regulation issued by OPS on December 5. However, the waiting requirements of sections 32 and 33 of the order are not altered.

For details see: Amdt. 35 (Change in Prohibitions), issued Dec. 5, 1951, to CPR 22 (Manufacturers' General Ceiling Price Regulation).

\* \* \* \* \*

PRICING OF NEW COMMODITIES UNDER CPR 22: The general manufacturers' ceiling price regulation (CPR 22) was amended by OPS on January 4 to simplify pricing of commodities whose ceilings cannot be determined in the usual manner provided in the regulation. These, generally, are new commodities not sold in the base period. The change (Amendment 39 to CPR 22) has to do with Section 34 of CPR 22, the section for manufacturers who cannot price under other sections of CPR 22.

Section 34 says that when a manufacturer cannot determine a ceiling price for a commodity by other provisions of CPR 22, then he may apply in writing to OPS for establishment of a ceiling price. He may not use his proposed ceiling price, however, until OPS has notified him, in writing, of the correct price.

Section 34 also says that if a manufacturer has established a ceiling price under sections 3 and 7 of the General Ceiling Price Regulation (GCPR), he may continue to use that price after filing under Section 34 until his CPR 22 price is established.

(Section 3 of GCPR is the main pricing section which establishes as the ceiling price the highest price at which a commodity was delivered during the base period, December 19, 1950, to January 25, 1951. Section 7 of GCPR is the section for sellers who cannot price under other pricing provisions of the regulation.)

The amendment makes two changes:

1. A manufacturer who has established a ceiling price under any regulation (not merely under the GCPR) may continue to use that price after filing for a CPR 22 ceiling price under Section 34, pending establishment of the CPR 22 price.

2. The second change has to do with Section 7 of GCPR--the section used by sellers who cannot price under the other provisions of GCPR. Before this change a seller whose ceiling price was established under Section 7 by OPS letter order had to apply, nevertheless, for a new ceiling price under Section 34 of CPR 22. By this change, this is no longer required. Information furnished under Section 7 of GCPR is substantially the same as that required under Section 34 of CPR 22.

Therefore, there is no point in requiring a seller who has obtained a price under Section 7 to refile under Section 34.

For details see: Amdt. 39 (Use of Previous Ceiling Price After Effective Date of CPR 22 in Certain Cases), issued Jan. 4, 1952, to CPR 22 (Manufacturers' General Ceiling Price Regulation), and Press Release OPS-O-623.

\* \* \* \* \*

MANUFACTURERS WHO FAILED TO FILE PUBLIC FORM 8 HAVE NOT ESTABLISHED LEGAL CEILING PRICES: A large number of manufacturers failed to file proposed ceiling prices by December 19, as required by OPS general manufacturers' and machinery manufacturers ceiling price regulations (CPR 22 and CPR 30), states a January 2 news release from OPS.

These regulations became mandatorily effective on December 19, and manufacturers of commodities covered by them were required to file OPS Public Form 8 by December 19 to establish proposed ceilings by applying labor and materials cost adjustments to pre-Korean prices. Manufacturers who failed to file Form 8 as required have not established legal ceiling prices for their commodities.

The Director of the OPS Office of Enforcement stated that immediate compliance by these manufacturers will be sought. Plans are being considered for a compliance survey and in the event of non compliance, for the immediate filing of injunctive actions in United States District Courts without preclearance in Washington.

Officials pointed out also that manufacturers of a fairly wide range of commodities have been given the option of continuing to price under the General Ceiling Price Regulation (GCPR) pending early issuance by OPS of specific tailored pricing regulations covering these commodities. Commodities subject to such optional pricing are listed under Supplementary Regulation 12 to CPR 22 and Supplementary Regulation 3 to CPR 30.

For details see: Press Release OPS-GPR-1129, issued Jan. 2, 1952.

\* \* \* \* \*

ALTERNATIVE METHOD OF CALCULATING OVERHEAD ADJUSTMENT FACTOR UNDER CPR 22: An alternative method of calculating the overhead adjustment factor for manufacturers using SR 2 of CPR 22 was announced by OPS on December 5. Amendment 1 to Supplementary Regulation 2 (Revision 1) to CPR 22 provides a method in which the manufacturer calculates the overhead adjustment factor for his entire business without calculating individual dollar-and-cents adjustments for each commodity.

For details see: Amdt. 1 (Alternative Method of Calculating the Overhead Adjustment Factor, issued Dec. 5, 1951) to Supplementary Regulation 2 (Revision 1) to CPR 22.

\* \* \* \* \*

SMALL MANUFACTURERS' CAPEHART ADJUSTMENT: A simplified method which certain small manufacturers and sellers of industrial services may use in making so-called "Capehart adjustments" in their ceilings was announced by OPS on November 29 with the issuance of GOR 20.

With only a few exceptions, manufacturers and sellers of services whose net sales did not exceed \$250,000 for the last fiscal year ended not later than July 31,



1951, are eligible to adjust their ceilings under GOR 20. Also eligible to use the regulation are manufacturers within the volume limitation who buy and resell some products made by other manufacturers. However, if such sales exceed 25 percent of the manufacturer's total business, he may not use GOR 20 to adjust his ceilings.

For details see: GOR 20 (Ceiling Price Adjustments for Small Business Concerns under Section 402(d)(4) of the Defense Production Act of 1950, As Amended), issued Nov. 28, 1951.

\* \* \* \* \*

CEILING PRICE ADJUSTMENTS UNDER CAPEHART AMENDMENT: A general overriding regulation (GOR 21) was issued by OPS on December 5 establishing the basic procedure which most business concerns will use to apply for an adjustment of their ceiling prices under the so-called Capehart Amendment (section 402(d)(4) of the Defense Production Act of 1950, as amended). It is the most general of a series of regulations issued for that purpose.

This regulation tells how to obtain adjusted ceiling prices for commodities manufactured or services rendered based on the highest prices received between January 1, 1950, and June 24, 1950, adjusted to reflect increases or decreases in costs between the dates these prices were received and July 26, 1951.

For details see: GOR 21 (Ceiling Price Adjustments Under Section 402(d)(4) of the Defense Production Act of 1950, as amended), issued Dec. 5, 1951.

Fact Sheet on General Overriding Regulation 21.

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WHOLESALE FOOD PRICE MARKUP SURVEY: A proposed interim survey of price markups in the wholesale food distribution business was discussed December 5 at a meeting between officials of the Office of Price Stabilization and members of the Wholesale Food Distributors Industry Advisory Committee.

The survey has been proposed so as to get an idea of how markups used in the wholesale grocery ceiling price regulation (CPR 14) compare with historical markups used in the trade. Industry members have contended that some of the CPR 14 markups are out of line with those normally taken in the past.

OPS said that information obtained in the interim survey may be used as the basis for possible temporary adjustment of markups, pending completion of a more thorough survey which is to be made jointly by the Bureau of Labor Statistics and OPS.

This exhaustive survey had been scheduled to get under way in 1950, but it was delayed due to reservations on selection of some of the items proposed.

For details see: News release OPS-GPR-1080, dated Dec. 5, 1951.

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TEST PROGRAM FOR COMMUNITY FOOD PRICING: The Office of Price Stabilization announced December 31 that it is about to try out "community food pricing" in three test cities. "Community food pricing" is a program of posted ceiling prices in grocery stores, a program that was highly successful in World War II, states an OPS news release.

The trial plan is based in part on a recommendation of the OPS Consumer Advisory Committee, and also in recognition of the fact that identifiable ceilings are best from the standpoint of both buyer and seller. Many consumers have complained that they have no way of knowing what the ceilings are in the stores where they shop for groceries.

The tests will take place shortly in Fresno, California; Fargo, North Dakota; and Jacksonville, Florida. In each of the three test areas, the program will take in all food stores in the city itself and in the immediately adjacent counties.

Community pricing is not designed to change prices. OPS is simply requiring the posting of dollars-and-cents ceilings figured on the basis of existing regulations which provide varying percentage mark-ups for groceries.

The grocery posting program is called "community pricing" because it establishes a ceiling price which is community wide for each listed commodity. The ceiling is the same in all stores of the same class throughout the community pricing area. Though it may sell for less, no store may sell for more than the flat, community-wide price.

In the OPS instructions to its field offices, community pricing is described as "essentially a technique for translating ceiling prices figured under the wholesale and retail food markup regulations into dollars-and-cents prices which are established on an area basis. The community prices are made available to the purchasers, as well as the sellers, by posting published price lists in retail stores."

Posting of dollars-and-cents ceiling prices is the main feature of the program. The other principal change is that grocers in Groups 1 and 2 (that is, the smaller independent stores) no longer figure their own maximum prices for items on the chart. That is done for them by the local OPS District Office.

For details see: Press Release OPS-GPR-1128, issued Dec. 31, 1951.

\* \* \* \* \*

CLARIFICATION OF USE OF PRICE LISTS TO ESTABLISH CEILING PRICES: An amendment clarifying a provision of GPCR under which manufacturers and wholesalers may establish ceiling prices by reference to bona fide price lists was issued by OPS on December 19. This amendment (Amendment 25) permits ceiling prices to be established on the basis of price lists containing both increases and decreases, if the price lists were announced in writing during or before the period December 19, 1950, to January 25, 1951. It also provides that, during this period, commodities delivered at the announced prices, must have constituted at least 30 percent of the 1950 sales of all commodities on the price list.

For details see: Amdt. 25 (General Increases and Decreases by Manufacturers and Wholesalers), issued Dec. 19, 1951, to GPCR and Press Release No. O-599.

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FUTURES CONTRACTS DEFAULTS: The Office of Price Stabilization has declined to modify an agency opinion that settlement prices for defaults on futures contracts in excess of the spot ceiling price for the commodity involved are not permissible under the Defense Production Act, according to a December 18 news release.

In denying the request by the Chicago Board of Trade for modification, OPS Chief Counsel quoted from General Interpretation 1, issued last June 20, that Section

707 of the Defense Production Act precludes the establishment of a settlement price for default on futures contracts in excess of the spot ceiling price for the commodity involved. To require a person defaulting to pay damages based on a market value in excess of the ceiling price would be to assume as a basis for settlement an illegal market price, he declared.

He added that there might be some cases where the Board may require those defaulting on delivery under futures contracts to pay an amount equal to the special or consequential damages actually incurred and directly attributable to the default. In such cases there would have to be an actual showing of such damages.

For details see: Press Release OPS-CPR-1108, issued Dec. 18, 1951.

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FISHING TACKLE TAILORED CEILING PRICE REGULATION PROPOSED: Members of the Fishing Tackle Manufacturers Industry Advisory Committee (IAC), at their first meeting on December 19, 1951, with Office of Price Stabilization officials, explored the possibility that a tailored ceiling price regulation may be issued covering the 25,000 or more items the industry produces. A sub-committee of three was appointed to study the situation.

Consensus of the IAC group was that the fishing tackle industry should be decontrolled. The industry has been pricing under the General Ceiling Price Control regulation (GCPR) or CPR 22 (the general manufacturers' regulation).

OPS officials said that, while the decontrol plea of the fishing tackle manufacturers would be given consideration, they could hold out little hope that the industry would be decontrolled.

Committee members said they had all filed under Ceiling Price Regulation 22 and that, with the exception of reels, which are pushing ceilings, most of the other items they produce are selling below ceilings. Because of competition and a soft market, most committee members declared, they do not currently take advantage of increases permitted under CPR 22.

The industry makes flies and lures, leaders and leader material, snaps and swivels, hooks, rods, lines, reels, complete fly casting outfits, landing nets, and accessories.

Committee members discussed application of Section 43 to CPR 7, the industry's retail regulation, under which some of the manufacturers have filed. Section 43, now undergoing revision by OPS, covers uniform pricing, pre-ticketing of merchandise and covers situations where manufacturers historically have suggested prices that retailers and wholesalers shall charge for their branded articles.

Pre-ticketing, they contended, is impractical for their industry because of the minute size of thousands of their products, such as hooks, flies, and lures. In addition, they said, pre-ticketing imposes a great burden of expense.

OPS officials explained that the agency feels strongly about pre-ticketing requirements, because they are the "heart and soul" of Section 43.

OPS officials expressed concern at possible loss of lower-priced items and asked whether incentive adjustments would prevent this. Committee members expressed the opinion that competition would result in effective price control. The consumer, they said, is the best price controller.



OPS officials stated that the agency is not receptive to general price de-control, and that only a few items, minor in their impact on the national economy, have been exempted. Early 1952, they said, will have a great inflation potential, with materials short in supply. For this reason, controls other than indirect controls, are necessary.

For details see: Press Release OPS-GPR-1117, dated December 19, 1951.

NOTE: FULL TEXTS OF PRICE ORDERS MAY BE OBTAINED FROM THE OFFICE OF PRICE STABILIZATION, WASHINGTON 25, D. C., OR FROM THE REGIONAL OPS OFFICE IN YOUR AREA.

### SALARY STABILIZATION BOARD

CHRISTMAS OR YEAR-END BONUSES FOR SALARY EMPLOYEES: Distribution in 1951 of "Christmas or year-end bonuses," not exceeding \$40 in value, by employers who made no similar distribution in prior years was authorized by the Salary Stabilization Board on December 14 with the issuance of General Salary Order No. 7. This distribution is permitted to any employees subject to the jurisdiction of the SSB, and is not to be considered salary or bonus for the purpose of any salary stabilization regulation.

However, employers who have been unable to pay bonuses under the existing salary regulations, due to the lack of an established plan or previous practice, were also authorized by the Salary Stabilization Board on December 17 to grant bonuses for 1951 under certain limitations without prior approval.

For details see: GSO 7 (Christmas or Year-End Bonuses Not Exceeding Forty Dollars in Value in the Absence of a Prior Practice), issued Dec. 14, 1951, and Press Release SSB-39, also SSB-40, issued Dec. 17, 1951.

### WAGE STABILIZATION BOARD

NO FILED REPORTS REQUIRED FOR COST-OF-LIVING INCREASES: Keeping of appropriate records in lieu of the filing of written reports for cost-of-living wage increases is the purpose of Amendment 1 to GWR 8, issued by the Wage Stabilization Board on December 6, 1951.

For details see: Amdt. 1 (Maintenance of Records), issued Dec. 6, 1951, to GWR 8 (Cost-of-Living Increases).

\* \* \* \* \*

OTHER REGULATIONS, ETC. ISSUED IN DECEMBER 1951: GWR 6, Feb. 27, 1951, Incl. Amdt. 1, Dec. 6, 1951 (Presents policies to correct inequities as have arisen because of disparities between increases in wages and salaries and the increase in the cost of living since January 15, 1950.)

Resolutions Regarding Policy Determinations and Other Substantive Matters.

Interpretation Bulletin 13, dated Dec. 1, 1951.



### Interstate Commerce Commission

EASTERN CENTRAL MOTOR CARRIERS GRANTED RATE INCREASE: Motor-carrier rate increases of 9 percent for carriers operating between the New England and Middle Atlantic States and the Middle West were allowed by the Interstate Commerce Commis-

sion, according to a recent announcement from that agency. The increases as proposed by the Eastern Central Motor Carriers Association were permitted to become effective December 24. (Probably some fishery products transported by these carriers are affected.)

A protest against and a request for suspension of these motor-carrier rate increases were filed by the Office of Price Stabilization on December 13 with the Interstate Commerce Commission. However, after due consideration the ICC failed to grant the request for suspension.

In its protest OPS said that the 915 carriers involved had not demonstrated a need for a 9-percent increase and asked public hearings before any increase was granted.

The increase would have a significant impact on the national economy, OPS pointed out, since the 442 Class I carriers under study received 51.21 percent of the total operating revenues for Class I motor carriers in the United States during the second quarter of 1951.

Increased freight rates granted the motor carriers would be reflected in the cost to consumers of the commodities they carry and hence in the general cost of living, OPS maintained.



### Tariff Commission

INVESTIGATION OF IMPORTS OF CANNED BONITO AND TUNA NOT IN OIL AND BONITO IN OIL: An investigation to determine the effects upon the domestic tuna industry of imports of canned bonito in oil and canned tuna and bonito not in oil was instituted by the U. S. Tariff Commission on December 28, 1951.

A public hearing, at which all parties interested will be given an opportunity to be present, to produce evidence, and to be heard, was ordered by the Commission for January 29, 1952, in Washington, D. C.

According to the public notice issued by the Commission, the investigation was instituted under the authority of Section 7 of the Trade Agreements Extension Act of 1951, approved June 16, 1951, and Section 332 of the Tariff Act of 1930. The purpose is "to determine whether the products described below are, as a result, in whole or in part, of the duty or other customs treatment reflecting any of the concessions granted on such products in the trade agreement with Iceland signed August 27, 1943, in the General Agreement on Tariffs and Trade, and in the exclusive trade agreement with Cuba signed October 30, 1947, being imported into the United States in such increased quantities, either actual or relative, as to cause or threaten serious injury to the domestic industry producing like or directly competitive products.

#### TARIFF ACT OF 1930

PAR. 718(A)

#### DESCRIPTION OF PRODUCT

BONITO, PREPARED OR PRE-SERVED IN ANY MANNER, WHEN PACKED (IN AIR-TIGHT CONTAINERS) IN OIL OR IN OIL AND OTHER SUBSTANCES.

TARIFF ACT  
OF 1930

PAR. 718(B)

DESCRIPTION OF PRODUCT

TUNA AND BONITO, PREPARED OR PRESERVED IN ANY MANNER, WHEN PACKED IN AIR-TIGHT CONTAINERS WEIGHING WITH THEIR CONTENTS NOT MORE THAN 15 POUNDS EACH (EXCEPT SUCH FISH PACKED IN OIL OR IN OIL AND OTHER SUBSTANCES).

"Applications for this investigation were made on November 28, 1951, by the California Fish Cannery Association and on various later dates by certain other parties. The applications originally included a number of products in addition to those specified above, but these ... were subsequently withdrawn ... The applications filed with the Commission are available for public inspection at the Office of the Secretary, U. S. Tariff Commission, Washington, D. C., and in the New York Office of the Tariff Commission, located in Room 437 of the Customs House."

AQUATIC RESOURCES OF THE RYUKYU AREA

The Ryukyu Islands are part of a larger island chain extending from the East Indies through the Philippine Islands into Japanese waters. Along this chain the warm Kuroshio brings many tropical species northward, thus producing a varied and diverse marine fauna in the Ryukyu area. Numerous reef fishes abound in the waters immediately surrounding the islands, and many unusual and primitive types of gear are used locally by the native fishermen to exploit this fauna. In addition, pelagic species such as the skipjack, Spanish mackerel, and dolphin come near enough to the islands for the natives to catch them by small-scale coastal operations. Tunas, spearfishes, and sharks are as a rule found in the deeper waters farther from land, where some species are found all year and some seasonally, as they move through the island area on their annual migration northward into Japanese waters.

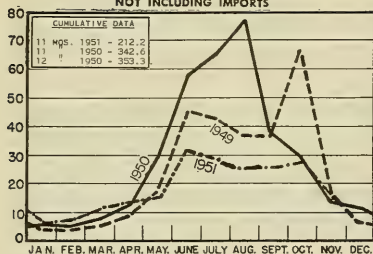
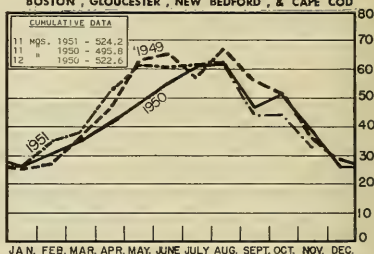
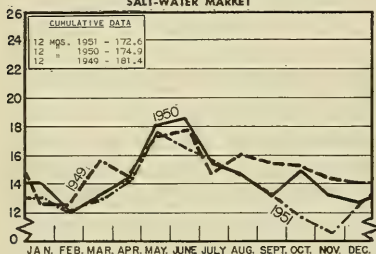
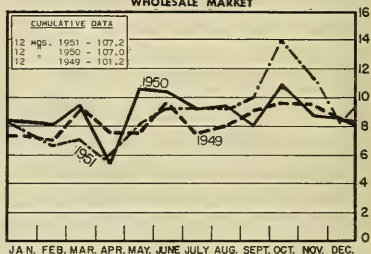
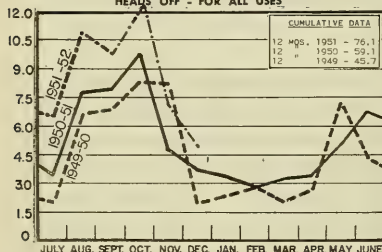
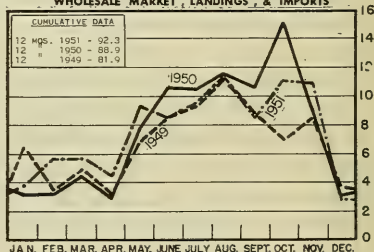
The tunas and the spearfishes are the most important of the species taken in numbers adequate to support large-scale commercial operations. These forms either follow the northward flow of the Kuroshio or remain in the Ryukyu area throughout the year. Although little is known about their migrations and habitat preferences, several facts reported by fishermen and fisheries investigators help explain the importance of the Ryukyu offshore and, to a lesser extent, coastal operations for these species. These reports indicate that high water temperature, the presence of the Kuroshio and other minor currents, and the contour of the ocean bed with its many shallow banks and deep runways are among the physical factors of the Ryukyu area which adapt it to the presence of the migratory fishes. Commercial operations for the tunas and the spearfishes are carried on most often where the current changes direction because it impinges on extensive shallow water areas, or where a sharp drop in water temperature occurs within a small area, or where reefs, rocks, and small islands are within the path of the current, as the migratory fishes are usually found in abundance under these conditions. Moreover, operations in the Ryukyu area are not hampered by rough and stormy weather for long periods, except during a few winter months.

In addition to local Ryukyu operations, skipjack pole-and-line and tuna long-line vessels based at ports in southern Japan direct their operations into the area, especially during the seasons when the migratory tunas and spearfishes are not available in Japanese waters.



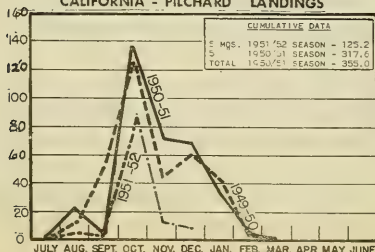
## LANDINGS AND RECEIPTS

In Millions of Pounds

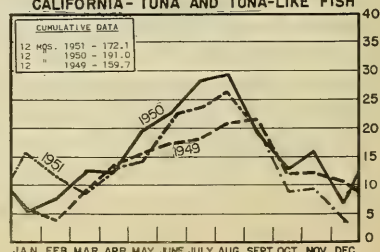
MAÏNE - LANDINGS  
NOT INCLUDING IMPORTSMASSACHUSETTS - LANDINGS  
BOSTON, GLOUCESTER, NEW BEDFORD, & CAPE CODNEW YORK CITY-RECEIPTS OF FRESH & FROZEN FISH  
SALT-WATER MARKETCHICAGO - RECEIPTS OF FRESH & FROZEN FISH  
WHOLESALE MARKETGULF - SHRIMP LANDINGS  
HEADS OFF - FOR ALL USESSEATTLE - RECEIPTS OF FRESH & FROZEN FISH  
WHOLESALE MARKET, LANDINGS, & IMPORTS

In Thousands of Tons

CALIFORNIA - PILCHARD LANDINGS



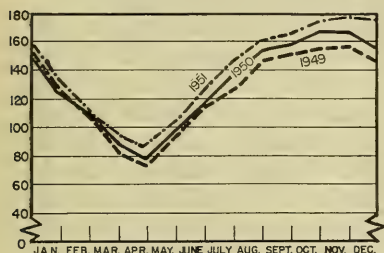
CALIFORNIA - TUNA AND TUNA-LIKE FISH



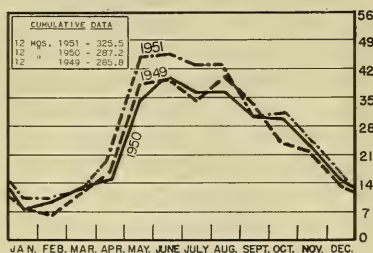
## COLD STORAGE HOLDINGS and FREEZINGS of FISHERY PRODUCTS

In Millions of Pounds

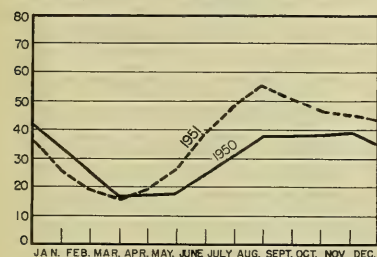
U.S. &amp; ALASKA - HOLDINGS OF FROZEN FISH



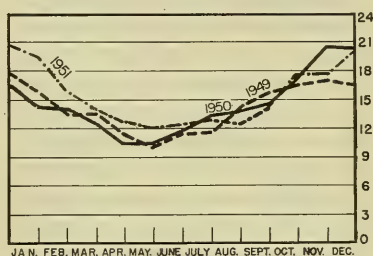
U.S. &amp; ALASKA - FREEZINGS



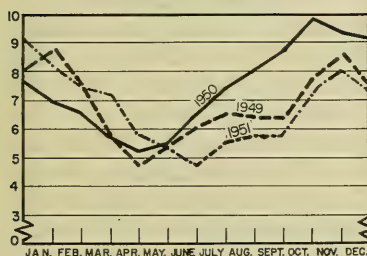
NEW ENGLAND - HOLDINGS OF FROZEN FISH



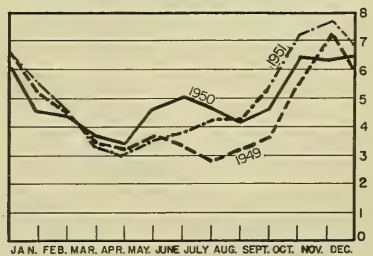
NEW YORK CITY - HOLDINGS OF FROZEN FISH



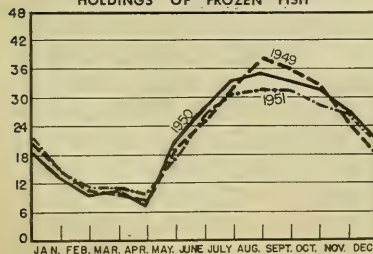
CHICAGO - HOLDINGS OF FROZEN FISH



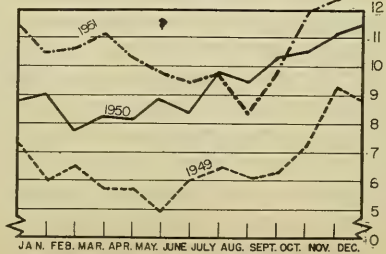
GULF - HOLDINGS OF FROZEN FISH



WASHINGTON, OREGON, AND ALASKA - HOLDINGS OF FROZEN FISH

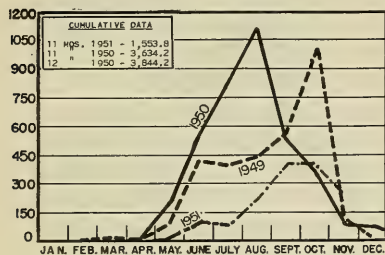


CALIFORNIA - HOLDINGS OF FROZEN FISH

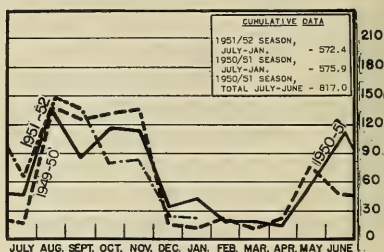


## CANNED FISHERY PRODUCTS

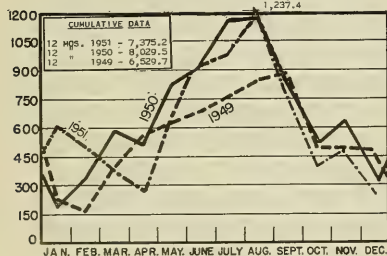
MAINE - SARDINES, ESTIMATED PACK



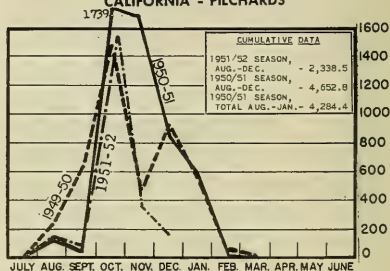
UNITED STATES - SHRIMP



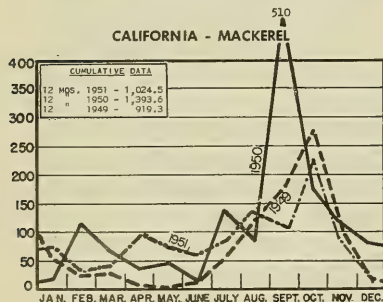
CALIFORNIA - TUNA AND TUNA-LIKE FISH



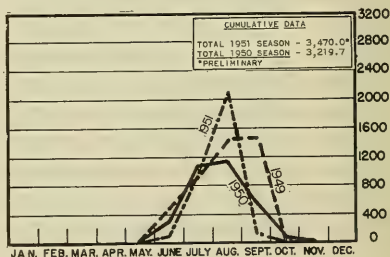
CALIFORNIA - PILCHARDS



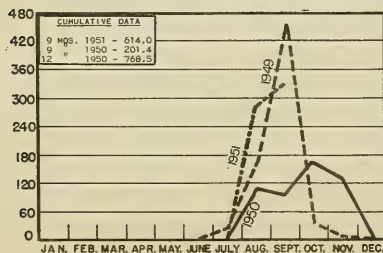
CALIFORNIA - MACKEREL



ALASKA - SALMON



WASHINGTON - PUGET SOUND SALMON

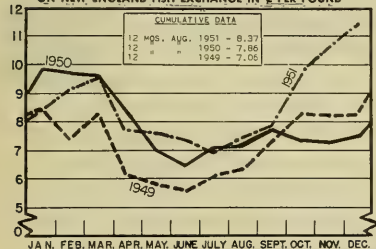
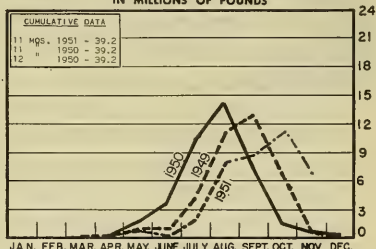
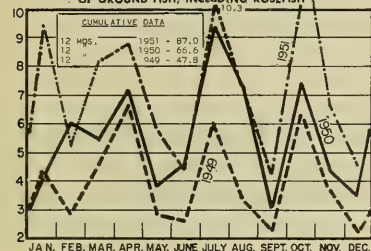
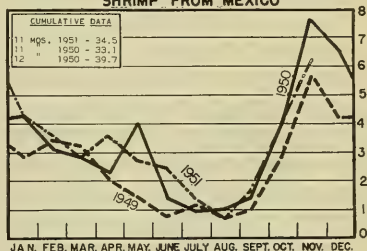
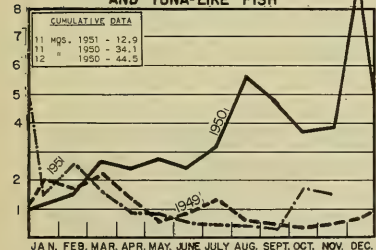
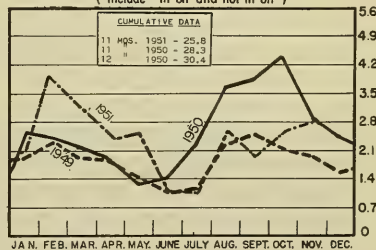
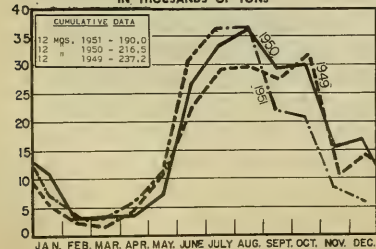
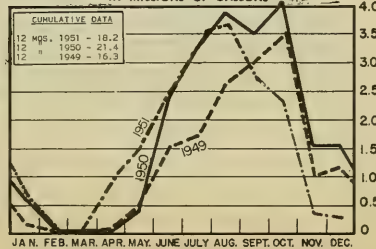


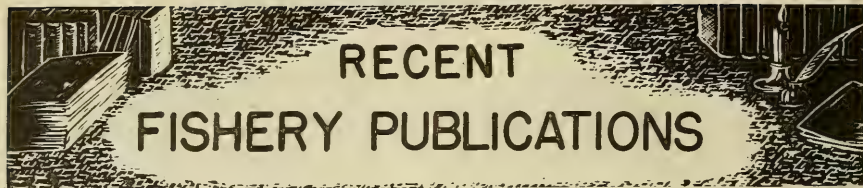
## STANDARD CASES

Variety	No. Cans	Can Designation	Net. Wgt.
SARDINES	100	1/4 drawn	3 1/4 oz.
SHRIMP	48		5 oz.
TUNA	48	No. 1/2 tuna	7 oz.
PILCHARDS	48	No. 1 oval	15 oz.
MACKEREL	48	No. 300	15 oz.
SALMON	48	1-pound tall	16 oz.



## PRICES, IMPORTS and BY-PRODUCTS

BOSTON - WEIGHTED AVERAGE PRICE  
ON NEW ENGLAND FISH EXCHANGE IN ¢ PER POUNDMAINE - IMPORTS OF FRESH SEA HERRING  
IN MILLIONS OF POUNDSU.S. - IMPORTS OF FRESH & FROZEN  
OF GROUND FISH, INCLUDING ROSEFISH  
In Millions of PoundsU.S. - IMPORTS OF FRESH AND FROZEN  
SHRIMP FROM MEXICOU.S. - IMPORTS OF CANNED TUNA  
AND TUNA-LIKE FISH  
In Millions of PoundsU.S. - IMPORTS OF CANNED SARDINES  
(Include in oil and not in oil)U.S. & ALASKA - PRODUCTION OF FISH MEAL  
IN THOUSANDS OF TONSU.S. & ALASKA - PRODUCTION OF FISH OIL  
IN MILLIONS OF GALLONS



Recent publications of interest to the commercial fishing industry are listed below.

## FISH AND WILDLIFE SERVICE PUBLICATIONS

THESE PROCESSED PUBLICATIONS ARE AVAILABLE FREE FROM THE DIVISION OF INFORMATION, U. S. FISH AND WILDLIFE SERVICE, WASHINGTON 25, D. C. TYPES OF PUBLICATIONS ARE DESIGNATED AS FOLLOWS:

CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES AND ALASKA.

SEP.- SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

SSR.-FISH - SPECIAL SCIENTIFIC REPORTS--FISHERIES (LIMITED DISTRIBUTION).

<u>Number</u>	<u>Title</u>
CFS-672	- Packaged Fish, 1950 Annual Summary, 4 p.
CFS-682	- Gulf Fisheries, 1949 Annual Summary, 6 p.
CFS-692	- New England Fisheries, 1949 Annual Summary, 6 p.
CFS-699	- Alabama Landings, September 1951, 4 p.
CFS-702	- Manufactured Fishery Products, 1949 Annual Summary, 8 p.
CFS-704	- Frozen Fish Report, November 1951, 10 p.

<u>Number</u>	<u>Title</u>
Sep. 293	- U.S. Lobster and Spiny Lobster Production (1921-49) and Imports (1920-49).

SSR-Fish No. 54 - Mid-Pacific Oceanography, January Through March, 1950, by Townsend Cromwell, 79 p., illus. July 1951.

THE FOLLOWING SERVICE PUBLICATIONS ARE AVAILABLE ONLY FROM THE SPECIFIC OFFICE MENTIONED IN THE REVIEW.

### Gulf States Production of Fishery Products, 1950

(As Reported to the New Orleans Fishery Market News Service Office), by S. C. Denham, 40 p., processed. (Available free from the Market News Service, U. S. Fish and Wildlife Service, 1100 Decatur St., New Orleans 16, La.) A review of the 1950 trends and conditions in the Gulf Coast fisheries is to be found in this publication. Among the subjects discussed are fish landings; the shrimp fishery (landings, factors affecting production, utilization, cold-storage holdings, prices, composition of catch, and canned pack); the oyster fishery (production and canned pack); crab meat; imports; and events affecting the fisheries in the Gulf. The statistics presented in this report are a compilation of data collected daily from the principal fishing localities

of the Gulf Coast and although they do not represent complete annual commercial fisheries production figures for the Gulf area or for any individual Gulf state, they do give an idea of the trends. Included in the statistical tables are data on the landings of fish and shellfish by months for certain specified localities on the west coast of Florida, and in Alabama, Mississippi, Louisiana, and Texas; crab meat production by months and areas; fishery imports; wholesale prices on the New Orleans French Market by months; a summary of the shrimp landings in the Gulf; the pack of canned oysters and shrimp; market classifications and approximate weight of Gulf species; and the closed shrimp seasons in the Gulf during 1950.

THE FOLLOWING SERVICE PUBLICATIONS ARE FOR SALE AND ARE  
AVAILABLE ONLY FROM THE SUPERINTENDENT OF DOCUMENTS, WASHING-  
TON 25, D. C.

Decline of the Lake Trout Fishery in Lake Michigan, by Ralph Hile, Paul H. Eschmeyer, and George F. Lunger, Fishery Bulletin 60 (from Fishery Bulletin of the Fish and Wildlife Service vol. 52), 21 p., illus., printed, 20 cents. To help determine the cause of the collapse of the lake-trout fishery in Lake Michigan in the 1940's, the authors give a statistical account of changes in the fishery. Production falls into six periods: 1879-89, development; 1890-11, high and relatively stable production averaging 8,230,000 pounds annually; 1912-26, moderately stable but somewhat lower annual production of 7,007,000 pounds; 1927-39, moderately stable but further reduced annual production of 5,293,000 pounds; 1940-44, accelerated production of more than 6,000,000 pounds annually; 1945-49, rapid decline to 342,000 pounds in 1949. Included in the booklet is a detailed study of production, estimated abundance, and fishing intensity in the eight districts of the State of Michigan waters, with 1929-43 as a base period for statistical analysis. The statistics refute the view sometimes advanced that overfishing caused the lake trout's decline. Generally speaking, fishing intensity was greatest in the early 1930's and declined thereafter. Abundance and production reached their peaks in the early 1940's. Figures for individual districts show a north-to-south progression in the time at which the decline set in, suggesting that a north-to-south progress of the sea lamprey was a major cause.

Breeding Habits of Lake Trout in New York, by William F. Royce, Fishery Bulletin 59 (from Fishery Bulletin of the Fish and Wildlife Service vol. 52), 20 p., illus., printed, 20 cents, 1951. Spawning habits of lake trout in New

York State, its age and size at maturity, and factors related to the spawning season, such as time of occurrence, length of season, and type of bottom selected for spawning, are discussed in this publication.

Characteristics of Spawning Nests of Columbia River Salmon, by Clifford J. Burner, Fishery Bulletin 61 (from Fishery Bulletin of the Fish and Wildlife Service, vol. 52), 16 p., illus., printed, 20 cents, 1951. One of the many problems in the relocation of salmon is that of determining how many spawners should be placed in each new stream. A study was made of the spawning habits of four species of Pacific salmon of the genus *Oncorhynchus* in the Columbia River watershed; 850 nests of chinook, silver, chum, and blueback salmon were measured. Mechanics of redd building, average size and depth of nests, size of gravel used, and stream conditions that modify these, are described in this report.

How to Cook Salmon, by Kathryn L. Osterhaug and Rose G. Kerr, Test Kitchen Series No. 4, 19 p., printed, 15 cents (discount of 25 percent allowed for orders of more than 100 copies), 1951. This booklet contains recipes for salmon on canapés, chowders, soups, salads, and a wide variety of main dishes. There are recipes for using whole salmon, salmon steaks and fillets, smoked salmon, and canned salmon. These recipes have been tested in the Service kitchens in both Seattle, Washington, and College Park, Maryland. This booklet is the fourth in a series of recipe books the Service has published on how to cook various fishery products.

THE FOLLOWING PUBLICATIONS ARE AVAILABLE FREE FROM THE  
DEFENSE FISHERIES ADMINISTRATION, U. S. DEPARTMENT OF THE  
INTERIOR, WASHINGTON 25, D. C.

The Fishing Industry and the Controlled Materials Plan, DFA Material Bulletin - Number 1, 4 p., processed, October 1951. This leaflet has been issued as an aid to fishing vessel and plant operators experiencing difficulty in obtaining materials necessary for the operations of their vessels or plants. Listed are the various National Production Authority Orders and Regulations which most directly affect the commercial fisheries; the procedures involved in obtaining materials and equipment for the construction, maintenance, and repair of vessels and shore plants; and the various preference ratings which are permitted the industry. Also included in this bulletin are various NPA Orders and Regulations which bear most directly on the fisheries, a definition of the terms generally used in the regulations, and a list of the seven field offices which handle DFA field activities throughout the country.

Instructions for Purchasing New and Replacement Engines for Fishing Vessels, DFA Material Bulletin - Number 2, 2 p., processed, December 1951. This leaflet outlines the procedures for purchasing replacement engines for fishing craft under CMP (Controlled Materials Plan). Although the procedures for obtaining new engines for newly-constructed fishing vessels are well established, many have experienced difficulty in obtaining replacements for worn-out engines. This bulletin outlines the methods by which an appeal can be directed to NPA, whereby the \$750 "minor capital addition" restriction can be adjusted in cases where undue hardship, safety, or disaster are involved so as to permit the purchase of replacement engines through the use of a preference rating.



## MISCELLANEOUS PUBLICATIONS

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE AGENCIES ISSUING THEM.

The American Ephemeris and Nautical Almanac (For the Year 1952), 671 p., with tables, printed, \$3.75. The Nautical Almanac Office, United States Observatory under the authority of the Secretary of the Navy, Washington, D. C., 1951. (Available only by purchase from the Superintendent of Documents, Washington 25, D. C.) This book provides in convenient form the astronomical data required by mariners; that is, the Greenwich hour angle and declination of the celestial bodies used in navigation.

"Arctic Research, 1951", by M. J. Dunbar, article, Trade News, November 1951, vol. 4, no. 5, pp. 6-7, illus., processed. Department of Fisheries, Ottawa, Canada. Arctic field work by the Fisheries Research Board of Canada in the 1951 season included Baffin Island, an intensive study of the Arctic char, and a preliminary survey of fishes and plankton in the Beaufort Sea. The research ketch Calanus sailed out of Fort Chimo, in Ungava Bay, and after a short cruise left Hudson Strait, sailing by way of Akpatook Island, Cape Hopes Advance and Lake Horbour, for Frobisher Bay in September. This article gives a short resume of the findings in the area covered by the Calanus.

Canning, Salting, Smoking, Cooking Florida Fish, by Isabelle S. Thursty, Bulletin 147, 22 p., illus., printed. Agricultural Extension Service, University of Florida, Gainesville, Fla., February 1951. Describes methods of canning, salting, and smoking fish at home. Discusses containers and preparation for canning; packing and processing soft-fleshed and firm-fleshed fish; and the preparation of fish chowder, fish roe, shrimp, oysters, and clams. In addition, it contains recipes using fresh or canned fish, as well as dressings, relishes, and sauces for fish dishes.

Deep-Sea Fishing in West Bengal, 15 p., illus., printed. West Bengal Government, Alipore, Calcutta, India, 1950. Describes the West Bengal Government's deep-sea fishing exploration enterprise. The booklet sketches the present deficiency in the supply of fish in West Bengal, limitations of inland fisheries, objectives of the deep-sea fishing explorations, earlier surveys, and disposal of the catch made by the exploratory vessels.

"Destruction of Fishes and Other Organisms on the South Texas Coast by the Cold Wave of January 28-February 3, 1951," by Gordon Gunter and H. H. Hildebrand, article, Ecology, October 1951, vol. 32, no. 4, pp. 731-6, illus., printed. Ecological Society of America and the Duke University Press, Box 6697, College Station, Durham, N. C. The effects of the cold wave of January-February 1951 on marine life in and around Aransas Pass are described by the authors. Due to physiographic features and the extremely rapid onset of the northerly, accompanied by sharp drops in water temperature, occasionally mortalities of marine life are caused. The shallowness of Texas bay waters, their practically landlocked condition,

and the rapidity with which cold northerly strike the coast are factors making the marine life of this area particularly subject to mortality from cold waves every few years. Since 1940, slight mortality was caused by cold waves in 1941 and 1949. Considerable damage was caused in 1947. The 1940 and 1951 episodes were cataclysmic. Probably the 1940 instance was the most severe although the 1951 freeze was the hardest. Estimates made by biologists of the Texas Game, Fish and Oyster Commission of the amount of fish killed in 1951 range from 60 million to 90 million pounds. It seems that if the damaging cold waves are preceded by other freezes, their destructive effect is lessened, according to the authors. Some animals escape to deeper water if the onset of the cold wave is slow and the rapidity with which the northerly strike is a factor influencing the amount of mortality.

(ECA) Thirteenth Report to Congress of the Economic Cooperation Administration (For the Quarter Ended June 30, 1951), 156 p., illus., printed, 40 cents. Economic Cooperation Administration, Washington, D. C., November 1951. (For sale by Superintendent of Documents, Washington 25, D. C.) Reports on the activities under the Economic Cooperation Act of 1948 as well as the programs of economic aid to Korea, the general area of China, to Yugoslavia, and to India. Edible fishery products, and whale and fish oils are listed as a group in some of the tables. Included is an appendix summarizing the status of the United States Foreign Relief Program and the U. S. Foreign Aid Program.

The Food and Feeding Habits of Nehu, by Robert W. Hiatt, News Circular No. 11, 5 p., illus. processed. Hawaii Marine Laboratory, University of Hawaii, Honolulu 14, T. H., January 1951. The study of the food and feeding habits of nehu, covered in this leaflet, is a part of an overall study of the nehu being conducted by the Hawaii Marine Laboratory. Brought out by the author is the application of the facts learned about the food and feeding habits of nehu to the number present in the various baiting areas, changes in the seasonal abundance in an area, relationship of size, difference in vigor and strength between small and large fish, and the declining bait fishery and weak fish in Hilo Bay.

Herring Industry Board Sixteenth Annual Report (for the year ended 31st March 1951), Cmd. 8322, 36 p., printed, 1s 3d net (about 20 U.S. cents). His Majesty's Stationery Office, London, England, August 1951. Reviews Great Britain's herring fisheries to April 1, 1951, the marketing of herring, research and development in the herring industries, and the Government's grants and loans to the industry. In addition, the report contains statistical tables giving the landings and values of herring catches and utilization for 1949 and 1950 and the winter seasons of 1950 and 1951. Experiments carried out by the Board to produce special types of cured herring for various markets are described, as well as campaigns to promote sales in the home market. Experimentation with

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herring oil and meal is also covered with future plans set forth.

Hong Kong Annual Report by the Director of Fisheries on the Fish Marketing Organization (For the Year Ended the 31st March 1950), 29 p., illus., printed. Director of Fisheries, Hong Kong, 1951. The Fish Marketing Organization in Hong Kong was planned with the object of insuring that the profits of the industry would go to the fishermen, and with a view to reducing prices to consumers. "Fishermen's syndicates" (now known as "depots") were established in the main fishing villages, each syndicate being under the management of a chairman who is paid from the funds of the Fish Marketing Organization. The primary function of these syndicates is the collection of fish from the fishermen and its transportation to the market. However, they also discharge other functions, such as the sale of supplies to the fisherfolk, and they act as centers for social welfare and education where advice is given to the fisherman on the various problems with which he is confronted. At the wholesale market, fish is bought by registered buyers at public auction and the fisherman is paid on the same day. Eight percent commission is deducted from all sales by the depots to cover their operating costs and capital expenditures on future expansion, buildings, education, and loans to fishermen, etc. Among the subjects dealt with in this year's report were the activities of the various depots, including the number of trawlers and fishing junks in each and the amount of fresh and salt fish handled during the year; loans to fishermen; wholesale markets; the activities of the fisheries inspectorate; and the various types of permits issued.

Loss of Weight and Shrinkage of Iced Fish on Trawlers, by C. L. Cutting, D.S.I.R. Food Investigation Memoir No. 701, 4 p., printed. Torry Research Station, Department of Scientific and Industrial Research, Aberdeen, Scotland, 1951 (Reprinted from The Fishing News 1951, No. 775, p. 10). Reports on the investigations of loss of weight of fish in ice on trawlers. This is a small self-contained portion of a survey to examine the various aspects of the technical problems associated with distant-water fisheries. In the past two years parties of two or three scientific observers have made a total of ten trips on various Hull and Grimsby trawlers fishing distant grounds to examine fish, make temperature measurements, and study the problems at first hand. Results as a whole as brought out by this report on the loss of weight of iced fish indicate that the loss of weight becomes greater as the fish get staler.

Prospects for the 1951-52 Herring Fishing Season, by J. C. Stevenson, Circular No. 24, September 1951, 8 p. with map, processed. Pacific Biological Station, Fisheries Research Board of Canada, Nanaimo, B. C. Contains a prediction of the prospects of the 1951-52 herring fishing season off British Columbia by districts.

Schedule B, Statistical Classification of Domestic and Foreign Commodities Exported from the United States, January 1, 1952, Edition; 1,161 p., processed; Annual Subscription \$3.50 to Domestic and \$4.75 to Foreign Subscribers. Bureau of the Census, U. S. Department of Commerce, Washington, D. C. (For sale by Superintendent of Documents, Washington 25, D. C., or Commerce Field Offices and Collectors of Customs.) This publication includes the numerically-arranged Classification of Exports; alphabetic index; code classification of countries (Schedule C), U. S. Customs Districts and Ports (Schedule D), and flag of vessel (Schedule J). The revised statistical classifications used by the Bureau of the Census in compiling export statistics as presented in this publication became effective January 1, 1952. For each numerical classification shown, the Bureau of the Census compiles export statistics showing volume and dollar value of exports.

"Seasonal Patterns of Oyster Setting in the James River and Chesapeake Bay," by Jay D. Andrews, article, Ecology, October 1951, vol. 32, no. 4, pp. 752-8, illus., printed. Ecological Society of America and the Duke University Press, Box 6697, College Station, Durham, N. C. (This article is Contribution No. 34 from the Virginia Fisheries Laboratory, Gloucester Point, Va.) "The James River seedbeds are one of the few oyster-growing areas of the world still operated successfully as a free fishery on natural oyster grounds," according to the author. The most important and basic biological feature of the James River seed area is the excellent strike (spatfall) which occurs each year without fail. Several years ago the Virginia Fisheries Laboratory began a study of oyster setting in the James River in order to determine whether planting shells in late summer would increase the setting and survival of spat, for it has been observed that sets occurred rather frequently during August and September. This paper presents the results from only one type of data—the weekly setting records. The seasonal pattern of setting is compared with other areas and possible explanations are discussed. The author points out that the study reveals that setting is usually continuous for about 90 days in the James River from the first of July to the first of October and that it is consistent from year to year. The small size of brood oysters, the scarcity of net plankton, and sex ratio and protandry are suggested as possible contributing factors to the late set in the James River.

Statistical Abstract of the United States, 1951 (Seventy-Second Edition), 1,053 p., printed, \$3.00. Bureau of the Census, U. S. Department of Commerce, Washington, D. C. (For sale by Superintendent of Documents, Washington 25, D. C.). Presents important summary statistics on the industrial, social, political, and economic organization of the United States, and includes a representative selection from most of the important statistical publications. Limited primarily to national data. National



THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE AGENCIES ISSUING THEM.

statistical data on the fisheries and allied industries are included. This edition is designated by the year of publication, but the statistics shown are the latest available in the early part of 1951.

(United Kingdom) Sea Fisheries Statistical Tables, 1950, 36 p. (mostly tables), printed, 1s. 3d. net (about 20 cents U.S.) Ministry of Agriculture and Fisheries, London, England, 1951. (Available from His Majesty's Stationery Office, London). Included in this leaflet are statistics on the quantity, value, and average value of the production of fish and shellfish in England and Wales by species, region, and other categories for 1950. Breakdowns by first-class British vessels (steam trawlers), demersal landings, and pelagic landings are to be found in the tables presented, as well as imports and exports. Also given are the number of fishermen, number and net tonnage of vessels, and number of first-class vessels by stations and type of gear.

#### TRADE LISTS

The Commercial Intelligence Branch, Office of International Trade, U. S. Department of Commerce, has published the following mimeographed trade lists. Copies of these lists may be obtained by firms in the United States from that Office or from Department of Commerce field offices at \$1.00 per list.

Agar-Agar--Exporters--Japan, 5 p. (October 1951). Lists the names and addresses of exporters, and in some instances indicates the size of the firm.

Oils (Animal, Fish and Vegetable)--Exporters--Japan, 6 p. (October 1951). Most of the exporters listed handle fish, fish liver, and whale oils. Names and addresses, products handled, and in some instances size of firm are given.

Canneries--Sweden, 5 p. (September 1951). Lists the names and addresses, products handled, and size of canneries in Sweden. Quite a number of those listed produce fishery products.

Canneries--Brazil, 20 p. (November 1951). Lists the names and addresses, products handled, and size of canneries in Brazil. Quite a number of those listed produce fishery products.

Canneries--Thailand, 2 p. (December 1951). Lists the names and addresses, products handled, and size of canneries in Thailand. Quite a number of those listed produce fishery products.

#### FISHING INDUSTRY IN BRAZIL

Brazilian production of fish has been increasing steadily ever since the first surveys were made in 1938. The speed of this increase cannot be expected to increase as long as fishing methods remain in the primitive state they are in now. Officials of the Division of Hunting and Fishing state that Brazil has not yet touched its fishing resources, whether at sea or inland, and that even the extent of those resources is not yet known.

Brazil's import requirements of fish remain at about 18,000 tons a year. The item most needed, as indicated by its inclusion in the list of "essential" commodities, is dried cod.

--Fishery Leaflet 329



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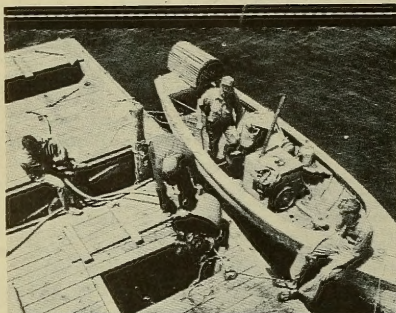
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Since Federal regulations require that all mailing lists be circularized periodically, a circularization letter dated January 15 was sent to all those on the Commercial Fisheries Review mailing list. (Individuals or firms who have been added to the mailing list subsequent to October 1, 1951, will not receive a circularization letter and will continue to be retained on the mailing list, unless the recipient meanwhile requests that his name be removed.)

## COMMERCIAL FISHERIES REVIEW



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DECEMBER 1951

FISH and WILDLIFE SERVICE  
United States Department of the Interior  
Washington, D.C.

The names of those firms and individuals who do not return the lower portion of the January 15 circularization letter will be deleted from the Commercial Fisheries Review mailing list. The February 1952 issue will be the last one to be mailed to those who do not reply. A prompt reply to the circularization letter will assure your not missing any issues of the Review.

The circularization notice contains several questions which are to be answered by the recipients of the Review. The editors respectfully urge you to answer these questions as the answers will aid the editorial staff to determine the type of material that should be published in the Review in order to better serve the needs and interests of our readers.

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